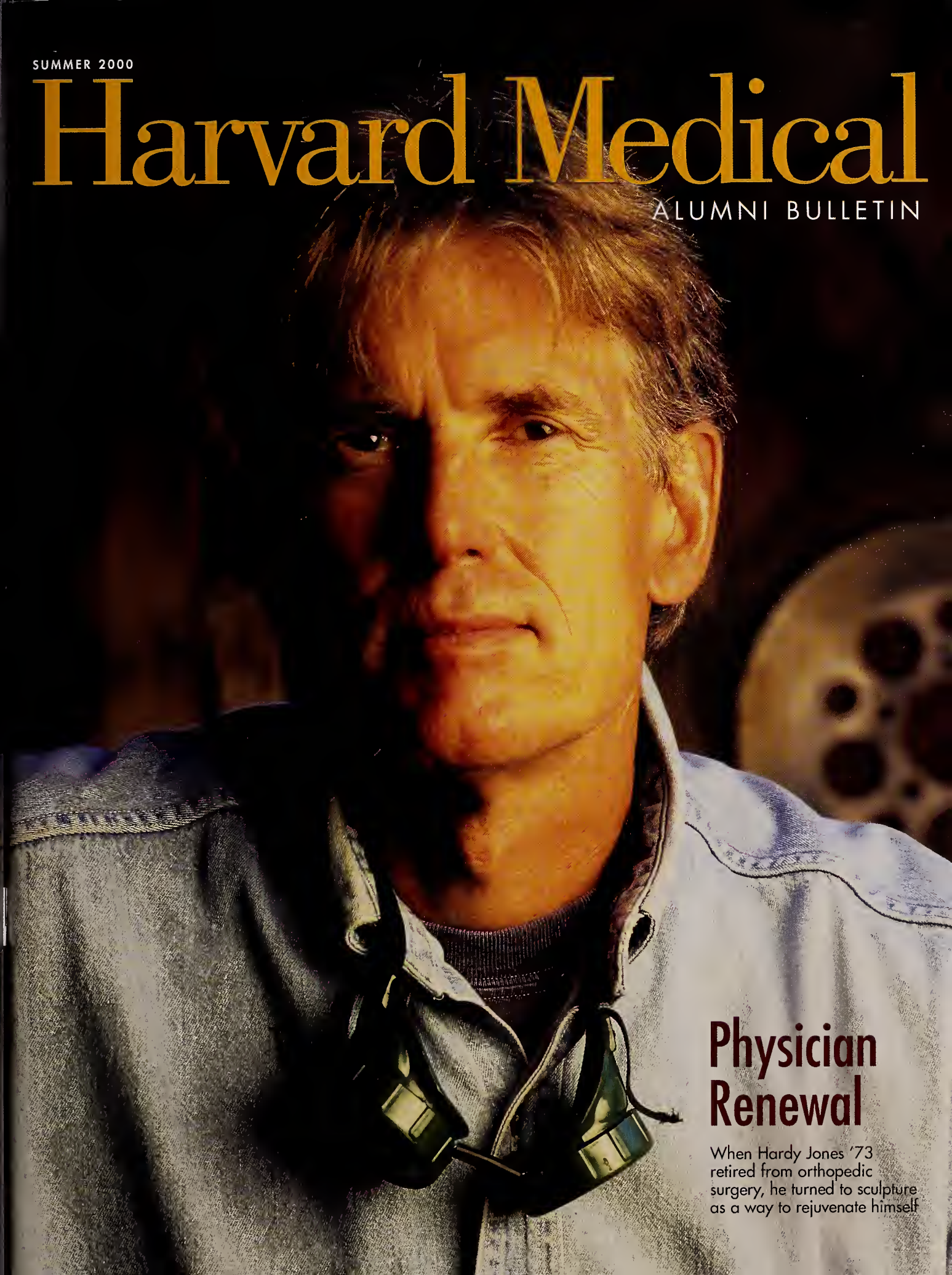
SUMMER 2000

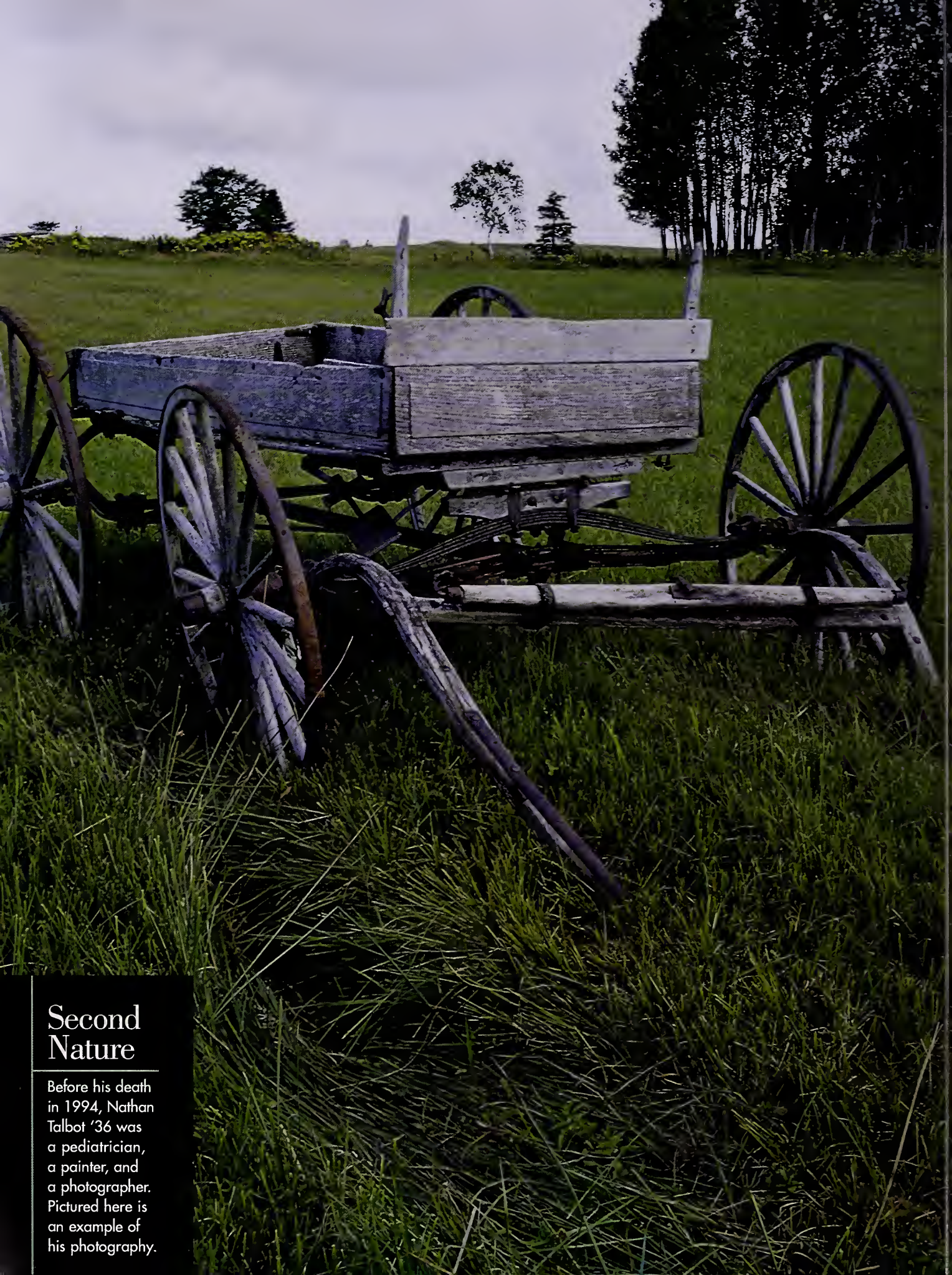
Harvard Medical

ALUMNI BULLETIN



Physician Renewal

When Hardy Jones '73 retired from orthopedic surgery, he turned to sculpture as a way to rejuvenate himself



Second Nature

Before his death in 1994, Nathan Talbot '36 was a pediatrician, a painter, and a photographer. Pictured here is an example of his photography.

SUMMER 2000 • VOLUME 74, NUMBER 1

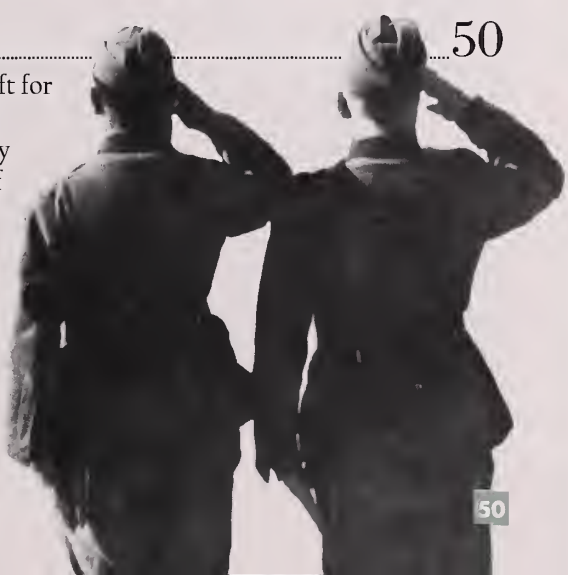
CONTENTS

DEPARTMENTS

PHOTO: COURTESY OF ANNE TALBOT

SPECIAL REPORT: PHYSICIAN RENEWAL

FEATURES



Cover photograph: When Hardy Jones '73 retired from orthopedic surgery, he took up found-metal sculpture as a way to renew himself. Photograph by Robert Holmgren.

In this Issue

I BEGIN WRITING THIS COLUMN FRESH FROM A MILD DOMESTIC ARGUMENT over the (accurate) accusation that I don't get enough exercise—and successfully evading a resolution of it with the sweet (and accurate) assertion that I need to finish this column or risk further delaying a production deadline. Now to avoid being called shameless (also accurately), I'll need to keep this issue of the *Bulletin* out of the house or else agree to an exercise plan. (Contrary to popular opinion, hypocrisy is never really the easy way out.)

"Physician renewal" was an unfamiliar term to me until we started work on this issue. The phrase is meant to move beyond the more restrictive concept of burnout prevention to a broader view of what it means to practice medicine creatively, conscientiously, and even joyfully for a working lifetime. There can be little doubt that this task has become considerably more difficult in the last few decades, and not just because of the resource limitations that we lump under the term "managed care." Readers of this publication hardly need a recitation of the financial, administrative, and human pressures that seem contrived to create a spirit of hopelessness and helplessness. But the worst of it seems to be the brute fact that there is more riding on every decision we make. Care of the patient still requires caring for the patient, but since Francis Weld Peabody coined the aphorism, the technical requirements of care have become much more exacting. Given that the amount of care and caring one can deliver to patients, community, and self is a zero-sum game, we may need some new aphorisms to supplement the old.

In this issue several distinguished physicians offer precepts and examples for renewal in, or beyond, a medical career. The fundamental recommendation, of course, is to maintain adequate self-care. As my father, an amateur sailor, would say to me in rough weather: "Always keep one hand for yourself and use the other one for the vessel." For physicians, this translates to, "Practice what you (ought to) preach." Perhaps even more fundamental is the notion from Epictetus by way of Victor Frankl as quoted by Charles Hatem—and perhaps exemplified by James O'Connell—in these pages: Retain the freedom to choose your attitude.

But as Dr. O'Connell points out, one does not choose one's attitude in a vacuum. This issue adopts a very personal stance toward the task of renewal, yet more, much more, needs to be written about what we as physicians can do collectively and systemically to renew the meaning of medical practice in ways sustainable for the long term. I trust that the *Bulletin* will return to this topic.

William Ira Bennett

The *Harvard Medical Alumni Bulletin* is published quarterly at 25 Shattuck Street, Boston, MA 02115 © by the Harvard Medical Alumni Association.
Phone: (617) 432-1548 • Fax: (617) 432-0013
Email: bulletin@hms.harvard.edu
Third class postage paid at Boston, Massachusetts. Postmaster, send form 3579 to 25 Shattuck Street, Boston, MA 02115
ISSN 0191-7757 • Printed in the U.S.A.

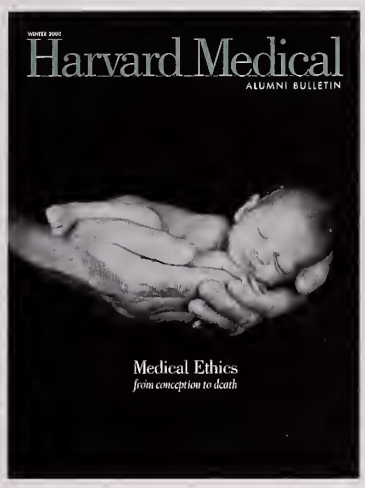


PHOTO: ANNE GEDDES

BUNDLE OF JOY

Your recent issue with the little baby in the hands, presumably, of a physician or the father, is a winner! You should be very proud.

FRANCIS D. MOORE, SR. '39
WESTWOOD, MASSACHUSETTS

Judging by Its Cover

The cover of the winter issue of the *Bulletin* really caught my attention. It was so well-done!

MAUREEN MURPHY
BOSTON, MASSACHUSETTS

Respecting Final Wishes

I was struck by the beauty of the thought-provoking photograph on the cover of the winter issue, and I found the articles enormously interesting. The article on assisted reproductive technologies, "Small Wonders," was fascinating, as were the articles on physician-assisted suicide. I am 83 and have a living will, so end-of-life-care issues are important to me. Too often, I find, a sick person's wishes about his or her death are not carried out.

ELIZABETH ZIMMERMANN
(WIDOW OF BERNARD ZIMMERMANN '45)
WESTWOOD, MASSACHUSETTS

Matters of Life and Death

Congratulations! The winter issue is the most trenchant you have ever published. All U.S. congressmen and senators should read Dr. Peter Patricelli's description of his experiences with physician-assisted suicide, so that, as they consider the so-called "Pain Relief Promotion Act of 1999," they may have an appreciation of what real-life choices are being made every day throughout the country.

Part of the appeal and effectiveness of the issue are the wonderful photographs, especially the very moving one on its cover. I hope you will tell us in the next issue who created these touching images.

NORMAN J. SISSMAN '50
PRINCETON, NEW JERSEY

Editor's note: We have received an overwhelming response to the images in the winter issue, especially the photograph on the cover and those featured in "Small Wonders." The cover shot, "Jack Holding Ariana," was taken by Anne Geddes, an internationally known photographer. Geddes, who is based in New Zealand, graciously allowed us to run the photograph without a fee. The photographs in "Small Wonders" were taken by Boston photographer Michele McDonald, who chronicled the earliest days of Harry, a baby born ten weeks early.

The Healing Arts

The winter issue was most thought provoking. It highlighted the problem presented to all who practice medicine in this age: the problem of ethics. Unfortunately, this is a very poorly defined subject. Concise definitions cannot be found in dictionaries or encyclopedias. It becomes apparent that ethical standards are influenced by many factors and are subject to variations according to time and cultural environment.

Perhaps ethics are the rules that determine what is right and what is wrong.

PHOTO: MICHELE MCDONALD

But this does not help because what is right is subject to varying interpretations. What is right for an individual may be wrong for the society as a whole. In the practice of the healing arts, we are taught to put our responsibility for the individual patient first. But do we not also have a responsibility to society as a whole? The two may be in conflict. If we spend an inordinate amount of our time, money, and personnel on one patient, we may deprive others of the care they need.

The doctrine of *non nocere* is not clear-cut, because saving or helping one patient may lead to harming someone else, though this may not be apparent at the time. The use of ethics committees may shift the responsibility for decisions from the individual practitioner, but it can also complicate matters. Sometimes the patient's health care provider, who has known all the circumstances in a way that a consulting committee cannot, is in a better position to make the hard decisions. The old-fashioned family physician often made the wisest decisions for the benefit of all concerned and was rarely second-guessed by well-meaning busybodies.

NEVILLE K. CONNOLLY '44
FAIRFAX STATION, VIRGINIA

Spreading the Word

A friend was kind enough to share a copy of the issue on medical ethics, and not only is the cover enchanting, but all the articles are so important. There is a tremendous need for wider distribution of the articles printed, and I only wish we could figure out a way to spread this issue further into the community.

MARY S. STRONG
WESTWOOD, MASSACHUSETTS

On the Money

In the excellent "Medical Ethics" issue, James E. Sabin '64 wrote in "Slicing the Pie" that our patients can help us deal with the ethical problems that arise when resources are limited. Fine. But we should also consider how rethinking the size of the pie and the way we distribute the slices could ameliorate the ethical problems of the individual physician.

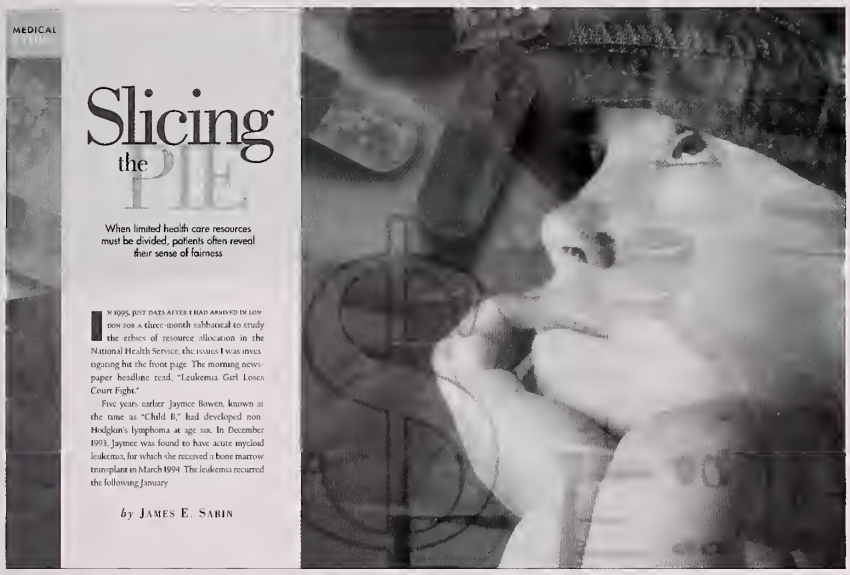
First, the size of the pie. America now spends roughly $1.2 trillion a year on health care, about half of that by government, both state and federal. Because the other half is spent by the private sector, largely by insurance companies whose sole financial responsibility is to maximize profit for their shareholders, there has not been a national debate on just how much we should be spending on health care. A provocative public policy question might be: even though we spend twice as much per capita as any other country, perhaps, with 44 million Americans uninsured, we should be spending more, not less. Should we not at least be talking about what is appropriate and feasible for the richest country in world history in an age of exploding, spectacular, and expensive medical technology?

A comparison with another public policy area is striking. For the military, which gets an extraordinary percentage of our tax dollars, there is a rough consensus that we spend "whatever is necessary." There was debate on the rightness of the Gulf and Kosovo wars, but their costs were neither specifically scrutinized nor debated. Moreover, for better or worse, there has been mainstream acceptance of increases in our $900-million-a-day military spending. In stark contrast, there has been scant consideration given to the ethical/public policy position that we spend "whatever is necessary" on health care.

Second, ethical pressures could be eased by making more effective use of the slices of the existing pie. A few years ago, the Congressional Budget Office estimated that the administrative savings of reducing the number of payers from 1,500 to one—the government—would be $100 billion a year. Moreover, HMOs currently squander 25 to 30 percent of their premiums on advertising, administration, executive salaries, and profit. Meanwhile, Medicare spends only 2 to 3 percent on administration. Even at present spending levels, universal Medicare would be a more rational and less wasteful system, which could ease the ethical problems of resource choice.

National health insurance would have another huge ethical benefit. It would eliminate the nefarious HMO practice of rewarding doctors for giving less care and punishing them for giving "too

PHOTO: STEVE BRONSTEIN/THE IMAGE BANK


MEDICAL

Slicing the PIE

When limited health care resources must be divided, patients often reveal their sense of fairness

IN 1995, JUST DAYS AFTER I HAD ARRIVED IN LONDON FOR A three-month sabbatical to study the ethics of resource allocation in the National Health Service, the issues I was investigating hit the front page. The morning newspaper headline read, "Leukemia Girl Loses Court Fight."

Five years earlier Jaymee Bowen, known at the time as "Child B," had developed non-Hodgkin's lymphoma at age six. In December 1993, Jaymee was found to have acute myeloid leukemia, for which she received a bone marrow transplant in March 1994. The leukemia recurred the following January.

by JAMES E. SABIN

ILLUSTRATION CAROLYNN DECILLO

much." This is profoundly unethical reverse fee-splitting that our profession should not tolerate.

Medical ethics problems and solutions are inseparable from public policy decisions. Therefore, all those concerned about medical ethics must enter the fray of public debate.

JAMES S. BERNSTEIN '52
ROCKVILLE CENTRE, NEW YORK

A Way with Words

I want to thank William Bennett, editor-in-chief, for his wonderful column in the winter issue of the magazine. It shines with his intelligence, breadth of understanding, liveliness, and wonderful balance between humility and forthrightness. And it is beautifully written.

LESTON HAVENS, MD
CAMBRIDGE, MASSACHUSETTS

One Diagnosis Does Not Fit All

The winter issue presented some interesting news of the investigations by members of the child and adolescent psychiatry group at Massachusetts General Hospital on the perplexing problem of attention deficit hyperactivity disorder (ADHD). Ms. Strobel mentioned in particular the group's work with drugs, brain imaging, and genetic factors.

Equally pertinent, but perhaps less newsworthy, are the efforts of some pediatric graduates of HMS, who are trying to clarify the various conditions now being lumped together under the broad diagnosis of ADHD. Much of the present confusion in the research in this area has been generated by the use of one convenient diagnostic label to describe an extensive range of variations, dysfunctions, and disabilities in many different kinds of children. In Chapel Hill, North Carolina, Melvin D. Levine '66 has for years urged replacing the single label of ADHD with a more comprehensive and dimensional evaluation of the child's specific strengths and weaknesses. Instead of using one diagnosis and one treatment for all, the management can then be adjusted to the cognitive, temperamental, and adaptational needs of the particular child.

I have suggested, not only at the NIH Consensus Conference on the Diagnosis and Treatment of ADHD in November 1998, but elsewhere as well, that there are major problems with the diagnostic criteria for ADHD. These problems include the fact that the designated ADHD behaviors are not distinguishable from normal temperament variations; the absence of clear evidence that the ADHD behaviors are related to brain malfunction; the neglect of the role of the environment in causing the symptoms of dysfunction; and the vague and highly subjective criteria used on the current diagnostic questionnaires. A better evaluation scheme along the lines suggested by Dr. Levine would go a long way toward eliminating the present confusion about who is being included in studies.

Investigations of drug treatment, brain imaging, and genetic origins will be inconclusive as long as the conditions being studied are not clearly defined. Meanwhile, users of cerebral stimulants for ADHD should understand that even normal children function better with them, and that an improvement during administration is no proof that a brain disorder is being treated.

Let us be optimistic, but let us also recognize that we have a long way to go.

WILLIAM B. CAREY '54
SWARTHMORE, PENNSYLVANIA

History Taking

"Cures by Epicures" in the winter issue is read with delight! It is appropriate that the editor have the last word in this significant edition. The issue rounds out this history of Fannie Farmer's association with HMS very nicely with "Glorious Deeds" by my HMS classmate, John Bunker '45, with whom I served an accelerated surgical internship at Massachusetts General Hospital, and "Mind and Body" by Eugene Taylor and "Taking the Cure" by John Stoeckle '47.

ROBERT S. SHAW '45
NEW IPSWICH, NEW HAMPSHIRE

The Bulletin *welcomes letters to the editor. Please send letters by mail (*Harvard Medical Alumni Bulletin, *25 Shattuck Street, Boston, Massachusetts 02115); fax (617-432-0013); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.*

HMS at the Millennium

FOR THE FIRST TIME, THE ALUMNI council is inviting all 8,500 alumni to a two-day seminar on research, education, and clinical medicine. The event, called "HMS at the Millennium: What's New & What's Happening In and Around the Quadrangle," is planned for October 20 and 21 and is designed to strengthen the connection between alumni and the School.

"Our goal is to make it easier for alumni to feel linked to HMS, and to let the School know about some of the great things our alumni are doing," said seminar organizer Tenley Albright '61. "We also hope many will view this as a good chance to catch up with colleagues and meet the newest faculty."

The seminar will feature presentations by more than a dozen speakers, including Dean Joseph Martin, Jeffrey Drazen '72, Daniel Federman '53, Judah Folkman '57, Gerald Foster '51, Charles Hatem '66, Paula Johnson '84, Philip Leder '60, and Eleanor Shore '55.

The topics will vary from computational genetics to proteomics to mucosal vaccines. Folkman will talk about endostatin; Leder will give an update on the newest findings in genomics and gene therapy; and Foster's speech will pose the questions, "Could you get into medical school now? Could I?"

To register for the event, for which CME credits are available, call Albright at 617-247-8202; email her at tenley1003@aol.com; or visit http://www.hms.harvard.edu/OnTheThreshold/oct20.html. ■

Schweitzer and Bach

TO COMMEMORATE THE 125TH ANNIVERSARY of Albert Schweitzer's birth and the 250th anniversary of Johannes Sebastian Bach's death, physician-musician members of the Longwood Symphony Orchestra will perform Bach's music, and current and past Schweitzer Fellows will talk about their experiences in Africa and Boston.

The event will take place October 20 in the Warren Alpert Building, at the end of the first day of the "HMS at the Millennium" seminar. It is being co-hosted by the Harvard Medical Alumni Association and the Albert Schweitzer Fellowship.

Before becoming a doctor, Schweitzer "was perhaps the world's leading authority on Bach near the turn of the century," says Lachlan Forrow '83, president of The Albert Schweitzer Fellowship.

From 1913 until he died in 1965, Schweitzer practiced medicine in Africa, where "he found his emotional and spiritual sustenance by playing Bach late into the night on a special piano designed to withstand the jungle humidity," Forrow adds.

Since 1979, more than 50 fourth-year HMS students have spent three months each as fellows at Schweitzer's hospital in Lambaréné, Gabon. More recently, 28 HMS students have served as Boston Schweitzer Fellows, working in the city's homeless shelters, AIDS clinics, and other frontline agencies.

"This event," says Forrow, "is a celebration of Schweitzer's life and legacy, the important role of music in healing, and the continuation of Schweitzer's legacy through new generations of HMS students and alumni." ■

HMS Retains Its Conflict-of-Interest Policy

IN A MEMO TO MEMBERS OF THE FACULTY this May, Dean Joseph Martin announced that he will not be recommending any new exceptions to the School's conflict-of-interest policy.

Martin stated, however, that HMS will be implementing a faculty committee's recommendations for strengthening the safeguards to protect medical students, graduate students, and other trainees from potential conflicts created by their mentors' financial interests.

The committee, which has been reviewing the School's ten-year-old policy since 1998, found great variability in conflict-of-interest policies nationwide. "Rather than add yet another variation," Martin wrote, "we would like to engage in a national dialogue on the issue involving universities, government, and industry.

"I look forward to participating in an ongoing dialogue on ways we can restore public trust in our research at the same time that we try to move science forward as efficiently as possible to the benefit of humankind," Martin added. ■

Breaking New Ground

HMS hapes ta break graund this fall for canstruction of a new research building on Avenue Lauis Pasteur adjacent ta the Harvard Institutes af Medicine (see model). This new facility will hause the HMS Departments af Genetics and Pathalagy alangside research teams from the affiliated haspitals warking in areas of camman scientific interest. The building will add 430,000 square feet af space far labarataries and related facilities. The Harvard Carparatian appraved the praject, estimated ta cast $313 million, at its meeting in May. ■

PHOTO LIZA GREEN

Match Day

FRIENDS AND FAMILY SHOWED UP TO SUPPORT STUDENTS IN THE Class of 2000 as they gathered outside the registrar's office in March to learn where they would be spending their residency. In June, 168 students were graduated; of those, 157 chose to enter clinical residency programs. The other 11 are deferring residencies to pursue opportunities ranging from writing to research to consulting. Primary care was the most popular residency, with 43 percent of the graduating class making that choice. Almost half of the students (48 percent) matched at Harvard-affiliated teaching hospitals.

ANESTHESIA

Hovig Chitilian
Massachusetts General Hospital
John Hiebert
Brigham and Women's Hospital
Ravi Joshi
Massachusetts General Hospital

DERMATOLOGY

Amy Adams
Massachusetts General Hospital
Ritu Batra
Stanford University Programs
Michelle Bonta
Oregon Health Sciences University, Portland
Alex Carcamo
Massachusetts General Hospital
Howard Chang
Stanford University Programs
Daihung Do
Boston University Medical Center
Kenneth Katz
New York University Medical Center, New York, NY
Karen Taraszka
Yale–New Haven Hospital

EMERGENCY MEDICINE

James Eadie
Brigham and Women's Hospital
Shan Liu
Brigham and Women's Hospital
Benjamin Sun
Brigham and Women's Hospital

FAMILY PRACTICE

Beverly Aist-Mejia
CHRISTUS Santa Rosa Health Care, TX
Melissa Dixon
Boston Medical Center
Nerissa Koehn
Tacoma Family Medical, Tacoma, WA
Rebecca Mammo
University of California, San Francisco
Raul Trejo
Scripps Memorial Hospital, Chula Vista, CA

GENERAL SURGERY

Liliana Bordeianou
Massachusetts General Hospital
Glenda Callender
University of Chicago Hospital
Rodney Chan
University of Washington Affiliated Hospitals
Sharon Chang
University of California Davis Medical Center, Sacramento, CA
Aaron Cheng
University of Colorado School of Medicine, Denver, CO
Heather Cohen
Stanford University Programs
Christine Hsu
Brigham and Women's Hospital
Timothy Jackson
Brigham and Women's Hospital
Marcus Jarboe
The University Hospital, Cincinnati, Ohio
Bart Kane
Brigham and Women's Hospital
Cassandra Kelleher
Washington University, St. Louis, MO
Shaun Kunisaki
Massachusetts General Hospital
Emerson Liu
Emory University School of Medicine, Atlanta, GA
Ricardo Moreno
New York University Medical Center, New York, NY
Brian Saunders
University of Michigan Hospitals

INTERNAL MEDICINE

Jennifer Ang
Brigham and Women's Hospital
Andrew Atiemo
Brigham and Women's Hospital
Ingrid Bassett
Brigham and Women's Hospital
Laurence Beck
Boston University Medical Center
Stephen Boppart
University of Illinois College of Medicine, Urbana, IL
Nakela Cook
Massachusetts General Hospital
Cascy-Arnou Charlot
St. Vincents Hospital, New York, NY
Annabel Chen
Massachusetts General Hospital

PHOTOS: LIZA GREEN

Dilon Daniel
Baylar Callege af Medicine, Haustan, TX
Saumya Das
Massachusetts General Haspital
Meg Doherty
Massachusetts General Haspital
Jon Duke
Brigham and Wamen's Haspital
Joanne Dushay
Beth Israel Deacaness Medical Center
Brendan Everett
Massachusetts General Haspital
Rachel Greenberger-Rosovsky
Brigham and Wamen's Haspital
Naomi Hamburg
Massachusetts General Haspital
Yuchi Han
Stanfard University Pragrams
Shannon Heitritter
Brigham and Wamen's Haspital
Eric Heller
Jahns Hapkins Haspital
Leora Horwitz
Maunt Sinai Haspital, New Yark, NY
C. Starck Johnson
Bastan Medical Center
Iris Kedar
Beth Israel Deacaness Medical Center
Kiran Khush
University af Califarnia, San Francisca
Sarah Lapey
Brigham and Wamen's Haspital
Lucy Martin
Jahns Hapkins Haspital
Matthew Matasar
New Yark Presbyterian Haspital–Calumbia Presbyterian, New Yark, NY
Erica Mayer
Brigham and Wamen's Haspital
Laura Michaelis
Brigham and Wamen's Haspital
Heidi Miller
Brigham and Wamen's Haspital
Siddhartha Mukherjee
Massachusetts General Haspital
Eric Nadler
Brigham and Wamen's Haspital
Stephanie Nonas
Brigham and Wamen's Haspital
David Ramirez
Cedars–Sinai Medical Center, Las Angeles, CA
Neda Ratanawongsa
University af Califarnia, San Francisca
Alisa Rosen
University af Califarnia, San Francisca
Robert Ruelaz
Harbar–UCLA Medical Center, Tarrance, CA
Anna Rutherford
Brigham and Wamen's Haspital
Molly Schachter
Brigham and Wamen's Haspital
Nancy Torres
University af Texas Health Science Center, San Antania, TX
Eunice Tsai
Stanfard University Pragrams
Carolyn Whatley
New Yark University Medical Center
John Wylie
Massachusetts General Haspital
Andrew Yee
Massachusetts General Haspital

NEUROLOGY

Anthony Chen
University af Califarnia, San Francisca
Yun-Beom Choi
Columbia University, New Yark, NY
Amy Hansen
University af Califarnia, Las Angeles
Lisa Horowitz
University af Washingtan Affiliated Haspitals

NEUROSURGERY

Manish Aghi
Massachusetts General Haspital
Rose Du
University af Califarnia, San Francisca
Adam Lipson
University af Washingtan Affiliated Haspitals
Marcus Ware
University af Califarnia, San Francisca

OB/GYN

Nerissa Concepcion
Cedars–Sinai Medical Center, Las Angeles, CA

Carolyn Cruz
University of Califarnia, San Francisco
Yashika Dooley
Wright–Pattersan Air Force Bose, Dayton, OH
Karen Fish
Wamen & Infants Haspitol, Providence, RI
Zsakeba Henderson
Brighom ond Women's Hospital
Elizabeth Johnson
University of Washingtan Affilioted Hospitols
Lena Kim
University of Califarnia, San Francisca
Laura Meeks
Brigham and Wamen's Haspital
Ann Schutt-Aine
University Heolth Center of Pittsburgh

OPHTHALMOLOGY

Fina Barouch
Mossochusetts Eye ond Eor Infirmory
Mary Saleeb
Wills Eye Haspital, Philadelphia, PA
Michael Tran
University af Califarnia, Las Angeles

ORAL SURGERY

Howard Clark
Massachusetts Generol Hospital
Jennifer Forshey
Mossachusetts General Haspitol
Melissa Lackey
Massochusetts General Haspital

ORTHOPEDIC SURGERY

Mark Adickes
Maya Graduate School of Medicine, Rochester, MN
Drew Brady
University Health Center of Pittsburgh
Jennifer Cook
Harvard Combined Orthapedics Progrom
Carl Deirmengian
Haspital af the University of Pennsylvania, Philodelphia
Jeremy Moses
Harvard Combined Orthopedics Program
Erik Spayde
Harvord Cambined Orthapedics Pragrom
Lawrence Sullivan
University af Michigan Haspitals

OTOLARYNGOLOGY

Nor Chiao
University of Californio, Dovis
Jennifer Shin
Harvard Medical Schaal

PATHOLOGY

John Branda
Massachusetts Generol Hospitol
Robert Padera
Brigham ond Women's Haspital

PEDIATRICS

Amy Adams
Baston Cambined Pediatric Residency
Alexy Arauz
Mossochusetts Generol Hospitol
David Chand
University Haspitols af Cleveland
Grace Cheng
University of Woshington Affiliated Haspitals, Seattle
Sarah Coats
Children's Haspital, Oakland, CA
Elizabeth Flynn
Bastan Cambined Pediatric Residency
Elena Huang
The University Hospital, Cincinnati, OH
Katherine Janeway
Boston Combined Pediotric Residency
Erika Kempler
Oregon Heolth Sciences University, Portland
Amy Kostishack
University of Califonia, San Froncisco
Huy Nguyen
University of Washingtan Affiliated Haspitols
Maureen O'Brien
Bastan Cambined Pediatric Residency
Laura Robertson
New York Presbyterion Hospitol (Columbia Campus Pragram), New Yark, NY
Melissa Scharf
Mossochusetts Generol Hospital
Marna Schwartz
University af Washingtan Affiliated Haspitals
Maureen Su
University of Califarnia, San Francisca
Sara Toomey
Baston Combined Pediotric Residency

Christina Vestergaard
Massachusetts General Hospital

PLASTIC SURGERY

Christopher Davidson
Brigham and Women's Hospital
Jennifer Verbesey
Lahey Clinic
Sean Wright
Brigham and Women's Hospital

PRIMARY CARE

Melissa Bender
Massachusetts General Hospital

PSYCHIATRY

Sonya Merrill
University of Texas Southwestern Medical School, Dallas, TX
Robyn Ostrander
Dartmouth–Hitchcock Medical Center, Hanover, NH
Michael Simson
Cambridge Hospital, Cambridge, MA

RADIATION ONCOLOGY

Jon Strasser
Joint Center for Radiation Therapy, Boston

RADIOLOGY

Richard Abramson
Brigham and Women's Hospital
William Copen
Massachusetts General Hospital
Whitney Edmister
University of California, San Francisco
Steve Fung
University of Texas–Houston Medical School, TX
Michael Goldfinger
Beth Israel Deaconess Medical Center
Steven Hetts
University of California, San Francisco
Phoebe Lewit
Beth Israel Deaconess Medical Center
Joy Masseaux
New York Presbyterian Hospital (Cornell Campus Program)
Fidel Rebeles
University of Washington Affiliated Hospitals
Sanjay Shetty
Massachusetts General Hospital
Martin Smith
University of Washington Affiliated Hospitals
Amy Symons
Mayo Graduate School of Medicine, Rochester, MN
Greg Zaharchuk
University of California, San Francisco

TRANSITIONAL MEDICINE

Christopher Drew
Malcolm Grow Medical Center, Andrews Air Force Base, Washington, DC
Shontaye McGriff
Cambridge Hospital, Cambridge, MA

UROLOGY

Stephen Boorjian
Cornell Cooperating Hospitals, New York, NY
Jonathan Chin
UCLA Medical Center
Patricio Gargollo
Massachusetts General Hospital
Ronald Yang
Kaiser Permanente, Los Angeles, CA

OTHER

Pradeep Atluri
Writing
Marc Awobuluyi
Postdoctoral Fellow, Salk Institute, San Diego, CA
Kristina Broadhurst
Health Care Industry
Rebecca Cherry
Doctoral Fellowship in Religious Studies, Jerusalem, Israel
Ernest Darkoh-Ampem
Management Consulting
Jeremy Dittman
Postdoctoral Research, University of California, Berkeley
Kenji Fujita
Associate, McKinsey & Co., Florham Park, NJ
Nina Lin
Fulbright Fellowship, Kathmandu, Nepal
Ikenna Okezie
Business, Boston, MA
Leon Palandjian
Principal, OneLiberty Ventures, Cambridge, MA
Gregory Weinhoff
Senior Associate, J. H. Whitney & Co., Stamford, CT

Whistleblowing

WHAT PROPORTION OF MEDICAL ERRORS, RESULTING in perhaps as many as 100,000 deaths each year in the United States, could be prevented by systematic changes to the health care system, and how many are the tragic, but inevitable, results of the fact that imperfect human beings practice medicine? And what is the role of a participant or bystander who sees harm being systematically done?

I first became impassioned about this issue in medical school more than 25 years ago. As an Armenian American, I had been raised with stories of the Armenian massacre of 1915, in which no one had rescued the victims. When I witnessed injustices, I spoke out. Tragically, when health care practitioners at the hospital where I then worked failed to report their incompetent and impaired peers, I faced a test whose outcome still troubles me.

Three of the first four patients whose care I observed during a cardiac surgery rotation failed to survive, largely because of poor surgical technique and excessive time on the bypass pump. Alarmed, I began asking operating room technicians and nurses if this was normal for this team, and they said that the team's high mortality rate was well-known throughout the hospital. In fact, the team's surgical cases were mostly referred from outside the area, because local doctors knew to avoid that particular team.

I approached the hospital's chiefs of medicine and cardiology. They ordered me not to discuss the matter with anyone, saying that it was beyond my understanding. They suggested that the patients had been so sick that other doctors would not operate on them, which would account for the high mortality rates. They also implied that if I went to the press, I would jeopardize my career. For several weeks, I agonized over the best course of action. We finally reached a compromise. The hospital chiefs promised to form a committee to evaluate the surgical team's practice. In turn, I agreed not to report the situation.

Two years later, the *Boston Globe* ran a story that was brought to light by an operating room technician at another hospital in which this team had also operated. In the two years between my original expression of concern and the appearance of the *Globe* story, the mortality rate for the team's open-heart surgery patients had been a stunning 50 percent. When I read the article, I felt both betrayed and guilty. I calculated that between my initial observation and the whistleblowing, some 200 people had died needlessly. The *Globe* story prompted hospital officials to form a committee, which later ascribed partial responsibility to the doctors. The operating room technician was fired. To this day, I have regretted that I didn't do more. And I worry about the way pressures not to blow the whistle protect flaws in the system or practitioners tacitly recognized to be a danger to patients.

In Massachusetts, the obligation to report a pattern of medical incompetence has since been made mandatory. The law requires anyone aware of a health care practitioner's impairment to report it to the Board of Registration in Medicine. Impairment is defined as conduct that "places into question the physician's competence to practice medicine, including but not limited to gross misconduct in the practice of medicine or practicing medicine fraudulently beyond its authorized scope or with gross incompetence." Physicians also must report cases in which a health care worker's "ability to practice is impaired by alcohol, drugs, physical disability, or mental instability."

Impairment can take many forms, even if it does not automatically result in demonstrable harm to patients. While taking an orthopedic course at one of Boston's best hospitals, I observed exhausted residents who had been on call three nights out of four for 18 months. After watching residents experience family problems and emotional turmoil—and even throw instruments around the operating room—I decided against becoming a surgeon and went into internal medicine instead.

I felt both betrayed and guilty. I calculated that between my initial observation and the whistleblowing, some 200 people had died needlessly.

I never accepted the idea that we were somehow better off if we learned how to work 36 hours in a row. As far as I could tell, sleep impairment only left us hostile toward our patients and the medical system. Studies have shown, in fact, that 24 hours of wakefulness impairs cognitive performance equivalent to a blood alcohol level of 0.1 percent. And one recent study in *The Lancet* found that surgeons who perform virtual operations after 24 hours without sleep demonstrate a 20 percent increase in errors compared with their error rate when well rested.

I believe that anyone who has worked for 24 hours straight is impaired and should not be practicing medicine. I also believe that any hospital that supports 24 hours on call without proper sleep is violating the law and endangering patients. To encourage the reporting of medical incompetence, perhaps hospitals should consider a reward system similar to the federal whistleblower laws. Until honoring such mandates becomes routine practice in all hospitals, some physicians will continue to put their patients' lives—if not their own consciences—at risk. ■

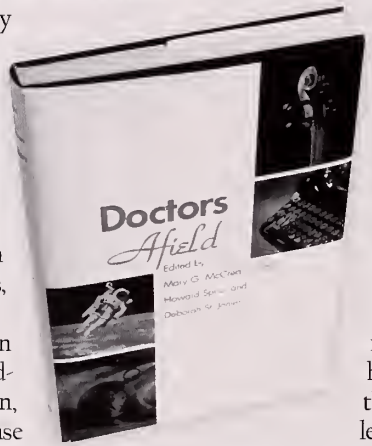
Thomas Najarian '74 is medical director of Medical Online, Inc. in Lexington, Massachusetts.

Doctors Afield

Edited by Mary G. McCrea Curnen, Howard Spiro '47, and Deborah St. James *(Yale University Press, 1999)*

THE REPORT FOR OUR TENTH REUNION WAS THICK AND FACTUAL, though all the organization in the world could not control the chaos and color of 165 scattered medical lives.

Once we had been equally unformed—shipmates rowing vigorously in the same unknown direction. Back then, in the leaky prow of Amphitheater D, few of us had any idea where we would wash up on shore. A decade later, we had landed in vastly different places. The GI surgeon in Utah had eight children now. Before he had become a surgeon, he was the calm student who always sat in the middle of the row; very pale, very unruffled, very polite. The sleep specialist in Boston, before he had become a sleep specialist, used to wander into lectures halfway through the morning, looking refreshed and unapologetic. The emergency room physician in Ohio skied before finals and juggled on the Quad. The Baltimore psychiatrist used to sit with his knees crossed in anatomy, his hands folded; he never took notes, but listened with freely hovering attention.



Everyone was somewhere else now, ten years advanced, defined, constructive, medical, arrived. What we had left in common, according to the reunion report, was the sense of the endlessness of each long professional day and, at the same time, the rapidity of each flying year.

But we had something else in common, too. Most everyone was more than a doctor now: there was a hiker, an aviator, a Lionel toy train collector, a firefighter, a woodworker, a church nursery director, a house-builder, a Jujitsu master. "Good God," said my lawyer-husband, "don't they do enough already?"

It's nothing new. Saint Luke was a physician, as was the philosopher John Locke. David Livingstone was a doctor and so was Thomas Dover, a pirate who studied at Cambridge and used his high-sea booty to fund a medical practice in London. You can learn this in the preface to *Doctors Afield*, a collection of essays by physicians who are all more than doctors. The book is a series of voices trying to explain their multiplicities.

Where to begin? There is the transplant surgeon who paints his patients' portraits, then gives photocopies to the pediatric patients so they can color them in together. There is the orthopedist sculptor (which seems to follow smoothly enough) and the urologist who, as a special assistant to the secretary of transportation, helped plan security for the 1996 Atlanta Olympics (less logical a flow). There is Ernest Craige '43A, cardiologist and cartoonist; in World War II, he created this nifty anti-VD slogan for the soldiers abroad: "Just 'Cause She's Demure, Don't Mean She's Pure." There is the wine-making psychoanalyst, the cabaret-singer endocrinologist, the pianist gastroenterologist, and Ray Hammond '75, who, at age 41, left surgery and emergency medicine to found an African Methodist Episcopal church with his wife in inner-city Boston.

In other words, there are cardiologists, pediatricians, surgeons, psychiatrists, anesthesiologists, and internists who are also sculptors, photographers, musicians, ministers, poets, and politicians. There is an astronaut and a legislator, a priest and a cartographer. There is a novelist, a composer, and the inventor of the Erector set. Their descriptions of themselves are proud, formal, slightly abashed, somewhat surprised, occasionally severe. Some of the writers are unable to escape dense medical syntax, some fly freely into imprecise adjectives; all are passionate. Everyone, needless to say, is also tired.

There are also eloquent explanations of how nontraditional lives give respite from traditional medicine, and why this is so necessary. Boston pediatric trauma specialist and jazz tuba player Eli Newburger writes that "every improvisation carries with it a prospect of redemption...'mistakes' in jazz... become platforms for new ideas, not catastrophes that destroy lives." In an essay lovely with metaphor, writer Rafael Campo '90 describes how poetry "can teach an alternate anatomy of the heart." An academic internist who also collects rare coins writes simply, "the profession [of medicine] controls me rather than vice versa."

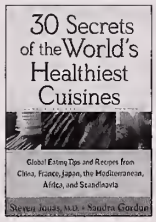
Medicine is enough, more than enough, sacred, and often too much—and yet, it is also not enough. This business is immense—a black hole of efforts and hours. It can be redemptive. But it is not always restorative, not in a literal self-ish way.

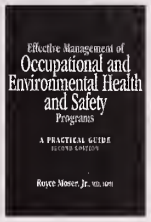
We become parents. We become church members. Some of us read murder stories. Some write them. Some sing in choirs, or make art, or make cookies, or make it a point to take walks—around the block, or in space. We do what we can with what little energy we have at the end of the stethoscope or consulting chair and at the end of the day. To treat ourselves, we must be more than doctors. The photographer Walker Evans understood why. "Stare," he once wrote. "Pry, listen, eavesdrop. Die knowing something. You are not here long."

In the Tenth Reunion Report, one alumna wrote in brief syllables of her occupations: research, children, gardening, cooking. Then, in the comment section, she added four words (probably because she had no time to write more): "Since 1987—I'm happy." ■

Elissa Ely '88 is a lecturer on psychiatry at HMS. Although she graduated in 1988, she matriculated with the Class of 1987.

PHOTO: LIZA GREEN





Death Foretold

Prophecy and Prognosis in Medical Care,
by Nicholas A. Christakis '88
(University of Chicago Press, 2000)

Prognosis, diagnosis, and therapy are the cornerstones of medical practice, but prognosis has traditionally garnered the least attention. Christakis argues that prognosis casts physicians in the position of prophets, and he explores the power and responsibility of such a role. Based on interviews with physicians, audiotaped clinical encounters, and a thorough review of the literature, Christakis examines doctors' moral duty to predict patients' futures and appropriate ways of doing so.

Timeline

by Michael Crichton '69
(Alfred A. Knopf, 1999)

In his 12th novel, Crichton reverses the process by which he brought the prehistoric world into the twentieth century in *Jurassic Park.* Here, he sends a team of young historians and archaeologists back in time to medieval France through an application of quantum theory. The students find themselves immersed in the Hundred Years' War as they attempt to rescue their mentor. The novel offers readers a unique blend of science, fantasy, and action.

Conscience is Good Medicine

by Robert B. Giles, Jr. '49 *(Eakin Press, 2000)*

Giles offers a personal recollection of living through a golden era of medicine. The author and his father were practicing physicians in Texas for a combined total of 70 years. He describes the astounding scientific breakthroughs they witnessed, the emotionally and spiritually rewarding patient/physician relationships they cultivated, and the evolution of medical ethics and morals over time.

30 Secrets of the World's Healthiest Cuisines

Global Eating Tips and Recipes from China, France, Japan, the Mediterranean, Africa, and Scandinavia, by Steven Jonas '62 and Sandra Gordon *(John Wiley & Sons, 2000)*

The authors combine some of the latest nutrition research with information about the healthy principles and ingredients used in culinary traditions from around the globe. They offer recipes developed by professional chefs and meal plans designed to reduce risk for diet-related diseases such as cancer, heart disease, diabetes, and osteoporosis.

Effective Management of Occupational and Environmental Health and Safety Programs

A Practical Guide (2nd Edition), by Royce Moser, Jr. '61 *(OEM Health Information, 1999)*

Filled with practical strategies and management techniques, this how-to guide is designed to help directors plan, implement, and evaluate occupational and environmental health and safety programs. Topics include legal and ethical concerns, and proactive and reactive approaches to containing corporate health and safety costs.

Intimate Strangers

Unseen Life on Earth, by Cynthia Needham, Mahlon Hoagland '46, Kenneth McPherson, and Bert Dodson *(American Society for Microbiology, 2000)*

A complement to a PBS television series, this richly illustrated book offers a general audience an introduction to the world of microbes, their interactions with humans, and their role in the earth's ecosystems. The book also features a comprehensive overview of microbes from their initial role as earth's first inhabitants to their possible future applications in science and medicine.

Pocket Medicine

The Massachusetts General Hospital Handbook of Internal Medicine,
edited by Marc S. Sabatine '94
(Lippincott Williams & Wilkins, 1999)

Designed to provide key clinical information in the same notebooks that most medical students and interns carry, this guide summarizes the most important points about the common problems seen in each of the basic areas of internal medicine. The six-ring binder, which contains blank space for a student's own notes and accommodates additional pages, was prepared by residents and attendings at Massachusetts General Hospital.

Getting a Heads Up on Migraines

Most of us are oblivious to the physical happenings inside our heads—the pulsing of blood, the fluttering of the dura (the membrane that surrounds the brain), the rise in intracranial pressure that follows a cough or sudden head movement. During a migraine, such goings-on can create inner pandemonium. On top of the constant throbbing that is a hallmark of migraines, simple gestures—a tilt or a shake of the head—can result in excruciating jabs of pain. Even at rest, a person with a migraine feels things most people do not.

"Migraine patients will tell you they are aware of the space between their brain and skull," says Rami Burstein, associate professor of anesthesiology at Beth Israel Deaconess Medical Center. It now appears that this almost preternatural sensitivity is not limited to the confines of the skull. Burstein, who is also HMS associate professor of neurobiology, and his colleagues have found that, during a migraine, patients may experience a range of painful hypersensitivities—symptoms that have only rarely been discussed with doctors and had not been noted in the medical literature until now.

PHOTO: GRAHAM RAMSAY

EXTREME SENSITIVITY: Rami Burstein found that most migraine patients perceive even a light brushing around the eye as painful.

In an experiment reported in the May *Annals of Neurology*, the researchers studied 44 patients before and during a migraine. They found that, during an attack, normally nonpainful sensations, such as a delicate brush or slight heating or cooling of the skin around the eyes, produced almost unbearable pain in 79 percent of patients. So sensitive was their skin that pressure equivalent to the nudge of a single strand of hair was said to feel like the thrust of a needle. Nor was this hypersensitivity limited to the skin of the face. Forty percent of patients displayed extreme sensitivity in the skin of the arm, another area tested in the study.

On the one hand, the study alerts patients and doctors to a set of symptoms that is often ignored. But the research also points to a newly hatched understanding of migraines—and possible therapies.

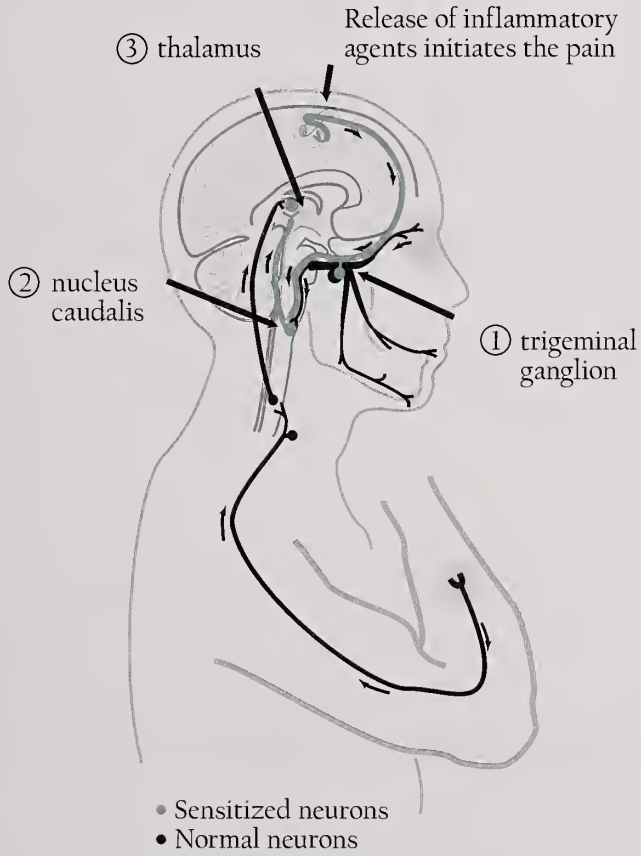
A Chain Reaction

Burstein believes that during a migraine, a chain of neuronal clusters becomes progressively "sensitized" in such a way that each cluster responds to stimuli that it would otherwise ignore, such as the pulsing of blood or changes in intracranial pressure. While the first cluster receives signals only from within the skull, specifically the dura and blood vessels, the others are more promiscuous. For example, the second cluster also receives input from the face, and the third from other areas of the body. Once sensitized, they perceive as painful otherwise nonpainful stimuli from those extracranial regions.

The progressive sensitization of the first, second, and third clusters could account, respectively, for the throbbing and facial and body pain, but Burstein believes it may explain other symptoms that migraine patients experience. Loss of appetite and sleep and mood changes, which are often viewed as side effects of the pain, may actually be caused by activation of higher-order neurons in the brain.

WHAT HAPPENS DURING A MIGRAINE

Neuronal clusters (green) become progressively sensitized, responding to stimuli that they would otherwise ignore. The progressive sensitization of the first, second, and third clusters could account, respectively, for the throbbing and facial and body pain that migraine patients experience.



COURTESY OF PAM GODSCHALL, BETH ISRAEL DEACONESS MEDICAL CENTER

Most migraine drugs target the first cluster of neurons, the trigeminal ganglion, essentially putting it to sleep. But such a strategy may not work for migraine sufferers who experience skin pain. Working with rats, Burstein has found that if the second cluster, the nucleus caudalis, is allowed to remain sensitized for an hour or more, it will maintain its sensitivity—and presumably continue to cause pain—even when the first cluster is put to sleep.

"This could explain why current antimigraine therapies, which work on the primary cluster, are only effective if taken during the first hour after an attack has begun," Burstein says. "So this study says to drug companies, 'Hey, you missed the most important part of the antimigraine drug industry—you have to target the secondary neurons.'"

Getting a Grip

For years, migraines were thought to be caused by the overexpansion of blood vessels in the head, which resulted in a buildup of mechanical pressure. In the early 1990s, HMS Professor of Neurology Michael Moskowitz and others showed that inflammatory substances released by blood vessels and nerve endings were overactivating the trigeminal ganglion, located just above the palate.

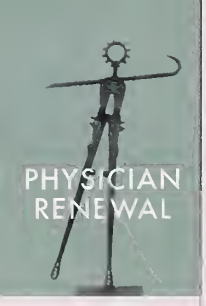
Four years ago, Burstein, working with Andrew Strassman, HMS assistant professor of anesthesia, showed that when inflammatory proteins were released around the dura and blood vessels of rats, neurons in the trigeminal ganglion were not only activated, but also sensitized. Knowing that these neurons sent signals to a cluster of neurons in the spinal cord, which also receives input from the skin around the eye, he tested cells in the nucleus caudalis to see if they would respond to normally imperceptible mechanical stimuli from the dura and skin. Sure enough, they did. And their responses were accompanied by a rise in heart rate and blood pressure, suggesting that the rats were feeling pain.

Burstein and his colleagues suspected that the migraine patients might also feel pain when stimulated around the eye. But they had no idea that such sensitivity might extend to other parts of the body, which were included in the experiment as control areas. "That was the most surprising thing to us," he says.

It might also seem astonishing that such hypersensitivity has been so seldom discussed by patients. When Burstein questioned subjects in his study, they told him that they were wary of being labeled crazy or hysterical. "Migraine is a very unclear disease," he says. "It mostly affects women, and there's a social implication to that—that they're not really sick."

Burstein encourages patients to overcome their fears and tell their doctors. "Don't be afraid to tell your clinician the weirdest symptoms you have," he says. "It could help in the diagnosis." ■

Misia Landau is senior science writer for Focus.



PHYSICIAN, HEAL *thyself*

For physicians struggling to cope with the current stresses in medicine, the search for a cure begins within

"I FEEL A SENSE OF ISOLATION WITHIN MY OWN hospital," a 40-year-old general internist and mother of twins confessed to me recently. "The current push for productivity has packed my schedule to the point that I regularly skip grand rounds, which I used to enjoy, grab a quick lunch—on my good days—and try to go home at a reasonable hour to be with my family. The economic message we're being given is very clear,

by CHARLES J. HATEM

oo often we fall into the sad irony of caring for

and at the same time, we're being asked to teach students and house staff—and get ourselves promoted. I'm not sure how long I want to be on this treadmill!"

This internist's lament is not unique. In this time of increasing pressures on doctors, the spectrum of physician distress ranges from this sort of disaffection to the painful reality of professional and personal disability. We need to tackle these issues head on, not only for our own sake, but for the good of those close to us and, ultimately, for our patients' well-being.

The Balancing Act

Professional hypocrisy—dispensing to others yet personally ignoring advice about leading a balanced life—is not a new problem for medical practitioners. Too often we fall into the sad irony of caring for patients while neglecting ourselves and those close to us. Moreover, our training as autonomous decision-makers frequently translates into our denying our own need for help. Beyond these well-known stresses are the ones the current literature bemoans: the corruption of medicine's values and the consequent disenchantment of many physicians. The research portrays a disturbing epidemiology of disaffection, burnout, and withdrawal from medicine.

Yet we need not succumb to these troubles. To preserve ourselves and our profession, we must recognize the need to renew ourselves, to reaffirm medicine's fundamental values, and to remember the privileges associated with the care of patients. John-Henry Pfifferling, a medical anthropologist whose work focuses on quality-of-life issues for physicians, has described observations from more than 1,200 doctors who have not only experienced loss in their personal lives and in their work, but who have also misplaced their sense of joy and satisfaction. These physicians offered a list of lessons they wished they had learned at earlier points in their careers, such as how to find balance in their lives and how to say "No!" in the face of ever-increasing demands. Their losses serve as pointed reminders that we are all at risk, and that we cannot afford to run on autopilot.

But where does renewal begin? The answer is deceptively simple: it begins with ourselves, and the realization that we are not limitless resources. Framed by the current disquiet in medicine, author John Gardner's reflections on self-renewal offer us a pointed challenge: "Just as shared beliefs and values are susceptible to decay, so are they capable of regeneration. Humans are not without talent in the creation and renewal of value systems. It may be their most distinctive activity. But in a world of swift change it calls for unrelenting effort."

The reconnection to our families, significant others, and friends can serve as a powerful beginning point. When I was making rounds recently, a conversation with an off-duty colleague moved me. He had stopped by the hospital to say hello to a fellow doctor who was on call, a visit meant to celebrate their friendship, which had begun 30 years earlier to the day. Clearly in the challenging aspects of their common work, this relationship had been sustaining. How many friendships do we celebrate?

We are not strangers to the strategies of renewal. Our counsel to others is straightforward enough: regular health care and exercise (not just lugging an unopened briefcase stuffed with unfinished work from office to home to office); adequate rest and guilt-free vacations unencumbered by unread journals; time alone to reflect and meditate; and the pursuit of interests beyond medicine. We know that satisfaction—and survival—in medicine requires both a clear demarcation of boundaries and a sense of humor.

In addition, the appreciation of the role of humanities in medicine is growing, with an expanding resource of extraordinary literature available for our enlightenment. There also is an increasing affirmation of the spiritual dimension of medical practice. This spirituality is not necessarily religious, but it can connect us with the transcendent principles that inform the care of patients and reflect the core values of medicine.

Following the Sigmoid Curve

A useful template for physician renewal lies in the "sigmoid curve," the ancient, sinuous curve so descriptive of biologic and social processes alike. The sigmoid curve teaches us to challenge ourselves at "point A"—our point of ascendancy or mastery—rather than at "point B," our point of decline. This model calls for us to change ourselves while we still have the considerable energy and resources we need to pursue a new vision. Our lives, in fact, should ideally follow a succession of such curves, not as escape trajectories, but as paths of renewal: the hobbies to be started or resurrected, the pursuit of new intellectual and social initiatives, the redefinition of time with family and friends.

Perhaps most critical of all for renewal is our own mindset. In Viktor Frankl's *Man's Search for Meaning*, the renowned Viennese psychiatrist writes about choosing to stay with his Austrian family in the dark days of World War II despite a visa to flee to the United States. Among his family members, only he survived the camps, making his assertion all the more poignant. "Anything can be taken from a man," he wrote, "but one thing: the last of human freedoms—to choose one's attitude in any given set of circumstances, to choose one's own way."

How simple the notion: attitude is key. Betsy Sanders, author of an inspirational book on the power of ordinary acts, tells the story of a bag lady who entered a major department store at the

patients while neglecting ourselves and those close to us.

height of the holiday season. She caught the attention of a local minister, who followed her, thinking that she could ease the bag lady's distress when the inevitable ushering out occurred. But instead, when the bag lady made her way to the fine-dress department, she was assisted in trying on various dresses. When the saleswoman was asked about this incident, she said she believed that her job was "to serve and be kind," an extraordinary attitude that we should all be proud to call our own.

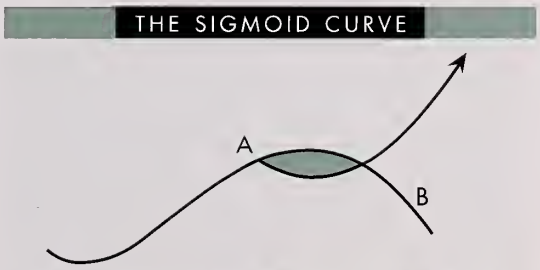
Lessons in Healing

Our attitudes must be calibrated to the values that are central to our lives. This is no small matter. In the view of Jewish theologian Abraham Heschel, "To heal a person, one must first be a person." We need to understand clearly what it is that brings us happiness in caring for our patients.

The values that ideally guide our lives and our work were wonderfully articulated by physician Ralph Crawshaw and coauthors in the *Journal of the American Medical Association.* "Medicine is, at its center, a moral enterprise grounded in a covenant of trust," the authors wrote. "By its traditions and very nature, medicine is a special kind of human activity—one that cannot be pursued effectively without the virtues of humility, honesty, intellectual integrity, compassion and effacement of excessive self-interest. These traits mark physicians as members of a moral community dedicated to something other than its own self-interest."

Daily, we are allowed access to the intimate stories embedded in our patients' life-and-death issues. Emotional fatigue often becomes the distorting prism that prevents a clearer understanding of the privileges of doctoring, but the lessons are there, ready for our reflection. I think of my patient "Gina," whose college graduation was thwarted by her promyelocytic leukemia. She decided that, rather than have her long, lovely hair yield to chemotherapy, she would take control and cut it off herself. Her sense of equanimity during her suffering marked her role not as student, but as teacher.

And I think of how "Bill," whose youth was spent in poverty, helped me understand the struggles of many during the Depression. His perseverance and subsequent career success were testaments to his strength and convictions as he confronted major debilitating illnesses while caring for his wife, who suffered from progressive dementia.



The sigmoid curve teaches us to challenge ourselves at "point A"—our point of ascendancy—rather than at "point B," our point of decline.

FIGURE COURTESY OF CHARLES HANDY, *THE AGE OF PARADOX.* RECREATED WITH PERMISSION, HARVARD BUSINESS SCHOOL PRESS, ©1994.

There are scores of other examples in my practice and in yours.

We need only to see. We need only to remind ourselves of what it is that gives our work meaning and joy. Whatever the admixture of our work—research, patient care, teaching—we can find pleasure in refining our professional skills, in adapting new advancements to our daily practice, and in sharing our lessons with the next generation of physicians.

One role model for me in achieving such feats was Leo Blacklow '30, who practiced in our community for more than 50 years. Until his death six years ago, he was a vibrant, intellectually alive, and curious physician; his passion for medicine was palpable. He often said that he received sustenance from three families—his biological family, the family of his patients, and the family of his colleagues. We, too, would do well to draw on the strengths of those around us.

The Future Begins Now

Peter Drucker, the legendary scholar of management, suggests that to prepare for the second half of one's life, it is necessary to begin long before it arrives. That, in his words, to "manage oneself" requires taking stock of personal strengths, reaffirming responsibility for relationships, and actively planning for the development of parallel career interests.

These arguments are not new. Retirement is a relative term, but whatever it represents, we need to plan for it. We need to help patients—and ourselves—be proactive about this stage of life.

Our values in medicine are too vital to become a casualty of the present distortions in the health care system. We will always need to accommodate the challenge of discovery, understand the attendant ethical and moral issues, and accept the challenge of appropriate incorporation of the new into the care of our patients. But we must uphold our core professional values, and we cannot accomplish this without preserving ourselves as practitioners and as people. ■

Charles J. Hatem '66 is director of medical education at Mount Auburn Hospital in Cambridge, Massachusetts. He is also president of the Harvard Medical Alumni Association for the 2000-2001 academic year.

PHOTO: RICK FRIEDMAN

FINDING

How does a doctor with one of the most depleting jobs–

by JAMES J. O'CONNELL

ALISON'S DEATH ON BOSTON COMMON THIS APRIL nearly broke our spirits. As her primary care doctor through many turbulent years, I had become fond of this proud, exacting, and often insolent 38-year-old woman.

With a pert smile and imperial stubbornness, Alison had departed New England Medical Center's emergency department as soon as the x-rays had failed to find fractures beneath her bruised and swollen face on the afternoon before her death. A week earlier, she had histrionically hailed Pine Street Inn's Outreach Van from her park bench around midnight. Bristling through shakes and tremors, she demanded a bed and posthaste delivery to her favorite detox on Boston's Long Island.

I knew to brace myself in the wake of any formal salutation. "Doctor O'Connell, you're in charge of the detox and I'm sick," she said. "Call now and arrange a bed. Be sure that Janet is the nurse on duty tonight. I had a drink about 15 minutes ago, and I'll need Librium in less than an hour."

This captivating and infuriating entitlement—urine-stained jeans and muddied sweatshirt notwithstanding—belied a fraying dignity and spiraling despair. Despite the late hour, the nurses were happy to make a bed available, and Alison's irrepressible charm lightened the ride down the expressway. We could not help but succumb to her laughter and heavily

HOME

providing health care to the homeless—sustain himself?

REACHING OUT: Physician James O'Connell and his team from the Boston Health Care for the Homeless Program scour the downtown areas during the day, and ride the Pine Street Inn's Outreach Van several nights each week. In addition to medical expertise, they provide food, blankets, clothing, and familiar faces.

ow do we reach out to bring the best of medicine to those

cloaked gratitude. All compliments were barbed.

"Why the hell do you work on the van, Doc? You should be home sleeping. I need you to be awake tomorrow so that you can figure out why I'm having these pains in my stomach! But no mind, Denny will figure it out faster than you anyway."

Denise Petrella is the nurse practitioner who has been my inspiration and partner in caring for the street population for many years. I had no doubt she would make the right—and timely—diagnosis. Our street team at the Boston Health Care for the Homeless Program (BHCHP) also includes two nurses sent directly from heaven, Cheryl Kane and Sharon Morrison. The challenge has been to step beyond acute episodic care on the streets and evolve a service model that emphasizes continuity and consistency in the delivery of primary and preventive care to street people whose contact with the health care system is marked by frequent emergency room visits and acute care hospitalizations.

We join the street outreach teams from the Pine Street Inn, the Lemuel Shattuck Shelter, and the Tri-City Mental Health Center in scouring the downtown areas during the days, and we ride on the Pine Street Inn's O-Van several nights each week. Such time-intensive outreach, anathema in this modern medical era, fosters the development of personal relationships with fiercely independent people who assiduously avoid mainstream clinics and other services. Such time and patience are the *sine qua non* of effective street care. The O-Van is deliberately designed not as a medical van, but as a lifeline to the streets, bringing soup, sandwiches, blankets, clothing, and familiar faces each night of the week from 9:00 p.m. until 5:00 a.m.

Much of my time on Mondays and Wednesdays is spent serving food, sharing soup, and seizing every excuse to strike up conversations. A white coat or a stethoscope would scatter most of our street folks, but quiet consistency and a blessed obscurity have earned us trust and confidence over the past decade. Most on the streets know us by name, and no advertising is needed; the word is out that the doctor and nurses are on the van if you need help. Not surprisingly, people are proud to have a primary care provider and are often willing to come to our clinics at Boston Medical Center (BMC) and Massachusetts General Hospital (MGH) to see us. We leave our beepers on, make ourselves readily accessible at the hospitals and in the shelters, offer a familiar face during frightening inpatient admissions, and join in the care during admissions to McInnis or Snead Houses, our two respite care facilities.

The Long Vigil

A year earlier, Denny and I had spent many hours at MGH with Alison during her week-long vigil prior to the death of her "street husband," Wayne. A grand mal seizure, while he was sleeping next to Alison on a frigid January night, had progressed to status epilepticus by the time he arrived in the MGH emergency department. During ten days in the ICU, he never regained consciousness and Alison rarely left his side.

"I'm pissed at him, leaving me alone like this."

The exquisitely tender care afforded both Alison and Wayne by the ICU staff was extraordinary. Two rough-hewn, feisty, independent lovers who eschewed confinement and called the Boston Common home were treated with the utmost dignity and respect amid the cacophony of monitors and pumps and ventilators. As health care proxy and the only next-of-kin, Alison was attentive and sober through several meetings with the Optimum Care Committee and ultimately made the courageous decision to withdraw life supports.

As she had promised during the ride to Long Island, Alison completed five days of medical detoxification from alcohol, but, to our disappointment, decided to forgo the 28-day program that had been so helpful to her in the past. She left for the streets two days before her death.

We aren't sure how she sustained the facial trauma that led to her emergency room visit, but afterward she met an old friend and slept under her usual tree on the Common. She mentioned that she was tired and wanted to join Wayne. The O-Van staff saw her sleeping comfortably under blankets around 3:00 a.m. She never awakened. At her outdoor memorial service, Alison's brother shared tender memories framed by family pictures of a bright and mischievous toddler and a proud and strikingly beautiful high school graduate. Alison's ashes were placed in Wayne's grave.

On the Margins

Alison was typical of Boston's "rough sleepers." Long a special focus of my practice, this group of idiosyncratic, rugged nomads and urban prophets shun emergency shelters and live on the margins of modern society. During the cold winter months in Boston, about 200 people sleep in the alleys and parks, over subway grates, beside heating ducts, in doorways, and under bridges. During the warmer months, this number swells to about 600. They survive by collecting cans, panhandling (called "stemming" by the street folks), dumpster diving, working the open-air farmer's market at Fanueil Hall, selling the *Globe* and the *Herald*, and taking day labor jobs.

Little is known about this elusive street population. They do not appear to differ demographically or ethnically from the sheltered homeless of Boston.

who are living in abject poverty on the margins of our society?

PHOTO GRAHAM RAMSAY

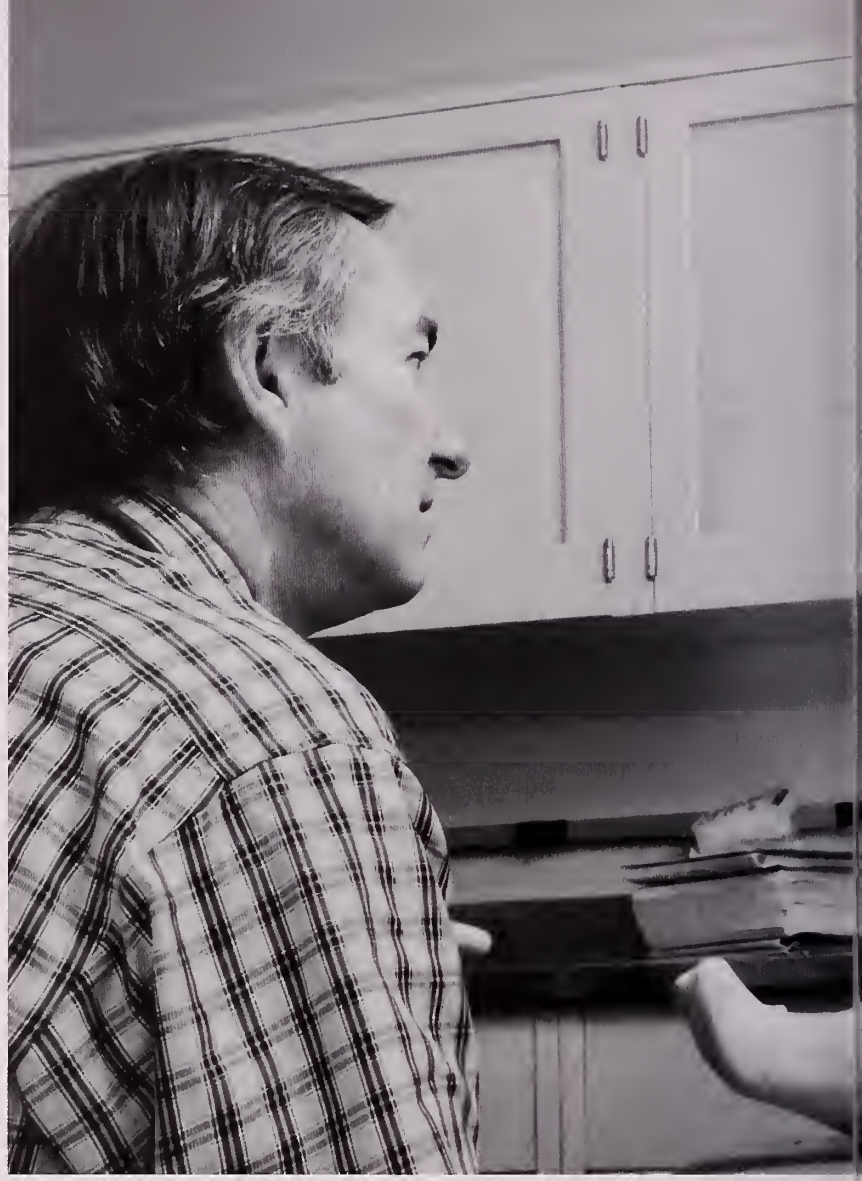
QUIET CONSISTENCY: James O'Connell says that caring for the homeless allows him to rely on the skills of compassion that first attracted him to medicine: listening to stories, being available for other people, sharing in sorrows and joys, easing suffering, and making an occasional difference.

Neither substance abuse nor chronic mental illness is more prevalent among the street dwellers. Their reasons for avoiding shelters are legion: the shelters have too many people or too many rules; the rough sleepers have paranoid delusions, obsessive compulsion, substance abuse, or erratic behavior that results in expulsion. Most shelters in Boston require admission before 8:00 p.m., and leaving the shelter after that time means losing the bed for the night. For active drinkers, this poses an overwhelming dilemma. While "bootleggers" with cheap wine and whiskey prey outside most shelters at 5:30 a.m., people still have to be willing to withstand the long night with plunging blood levels of alcohol and drugs.

During one recent winter, 13 homeless people died on the streets of Boston. These deaths, which took place during a mild winter and at a time of unprecedented economic growth, jarred our complacency and—at what had been a nadir in local and national interest in homelessness—suddenly generated intense media scrutiny. The City of Boston and the Massachusetts Department of Public Health asked BHCHP to investigate the circumstances surrounding these tragic deaths.

While one woman remained unidentified in the city morgue, we reviewed the death certificates and hospital records of the other ten men and two women. The symbolism of the institutions where their bodies were found was poignant, if not downright eerie: behind the Boston Police Headquarters in Roxbury, on the grates beside the Boston Public Library, across the street from the Holy Cross Cathedral, and even in a small park just steps from the main entrance to MGH.

These people had not fallen through the safety net. Most struggled with permutations of severe and chronic medical, mental health, and substance abuse problems. All had at least four major medical problems, all suffered from acute and chronic alcoholism, and two-thirds had a major mental illness, with schizophrenia and bipolar illness the most common. All had medical insurance through Medicaid, Medicare, or both. Strikingly, nine of the twelve had made emergency rooms visits to BMC or MGH or had been admitted as inpatients within three weeks of the day of death. Many had been seen multiple times, with several having received care within 72 hours of death. Ten of the



twelve had entered publicly funded detoxification programs within six weeks of death, and three had died on the streets within a week of discharge. Half of those who died had also been admitted to McInnis House with acute medical problems during the six months before their deaths.

Most of the deaths occurred on Sundays or early Monday mornings, a curious consequence of the commonwealth's "Blue Laws," which prohibit the sale of alcohol on Sundays. Most had a history of frostbite, a recognized marker for those at greatest risk on the streets. And most imbibed Listerine, the ubiquitous mouthwash that contains 27 percent alcohol—54 proof!—and is consumed by those unable to obtain wine or spirits.

To turn the usual practice of medicine even more topsy-turvy, all decedents seen in our emergency rooms had voiced suicidal thoughts and plans when inebriated. Indeed, most had had high alcohol levels on presentation, but were found to be in no danger of harm to themselves upon psychiatric evaluation while sober many hours later. One 49-year-old Vietnam veteran had visited the MGH emergency room more than a dozen times, all in the hours after midnight. The MGH staff often found him pounding ceaselessly on the hospital lobby windows, with a core body temperature of 92 degrees and astonishingly high alcohol levels. His entreaties were faithfully recorded: "I'm sad"; "I'm my own worst enemy and I can't guarantee my safety"; "I could electrocute myself, because I work with high voltage."

By the morning, after he had slept, eaten, and regained his unquenchable thirst for alcohol, both he and his psychiatrist were convinced that he was not truly suicidal and was therefore safe enough to return to the streets. He tried several detoxes, and we even went to court to have him committed to the Massachusetts Correctional Institution at Bridgewater for 28 days of drying out. He was back in the emergency room three days after his release, with a high alcohol level and clutching a bottle of Listerine. Six days before he was bludgeoned to death on Long Wharf, he came for the last time to the emergency room and literally pleaded to be placed in four-point restraints.

"I can't be allowed to change my mind," he said. "I know I'm going to die if I keep this up. I know how to make a hangman's noose, so please don't let me out of these restraints when I wake up in the morning!"

In the morning, after being deemed not suicidal, he had been sent to a local detoxification program. We are not sure whether he ever made it there. As I think about my patients on the streets, I wonder whether their hopelessness is a death spiral as true as the hangman's noose, and whether their desperate comments while intoxicated are the *cri de coeur* that should be guiding our treatment, rather than the inevitable denial of the next morning.

Blessings that Sustain

The devastation from Alison's death permeated our street team for weeks, and the reverberations linger still. Despite death's starkly familiar presence on the streets and our steely clinical grit of years of caring for those exposed to weather extremes, Alison had gotten under our skin: young, bright, charismatic, and full of promise. We rooted for her to beat the odds. Hours of care and concern would surely help quiet the Furies that relentlessly pursued her clear across childhood to her deathbed on the Common. She had borne more sadness, been offered fewer choices, and suffered through more physical and sexual violence than any of us could imagine. Death dashed all hope of success, and opened Pandora's box anew for us: do our efforts make a

PHOTO: GRAHAM RAMSAY

OUT ON A LIMB: Intensive outreach to those living on the streets allows health care providers to develop personal relationships with fiercely independent people who tend to avoid mainstream clinics and other services.

difference, or is this litany of suffering and death inexorable?

Caring for homeless people has been my full-time job for more than 15 years. I suspect that the joy I have always found in my job bespeaks a deep character flaw, a subject puzzled over often with my close friend and hero, Pedro Jose Greer. A Cuban-American physician who has worked miracles in caring for homeless people in Miami for years, he is rapier-quick in noting that the Irish are a people whose sense of impending tragedy and guilt through the centuries has held them together during brief moments of unmitigated joy. While this essay could no doubt plumb the former, I would prefer to seize the joy.

A number of unanticipated blessings have protected me through the years. First, medicine still fascinates me. The acuity, complexity, and range of illness in the homeless population is bewildering, from AIDS and tuberculosis to chronic diseases. For those who love the science of medicine, the burden of disease is compelling, the need great, and the clinical challenges truly exhilarating.

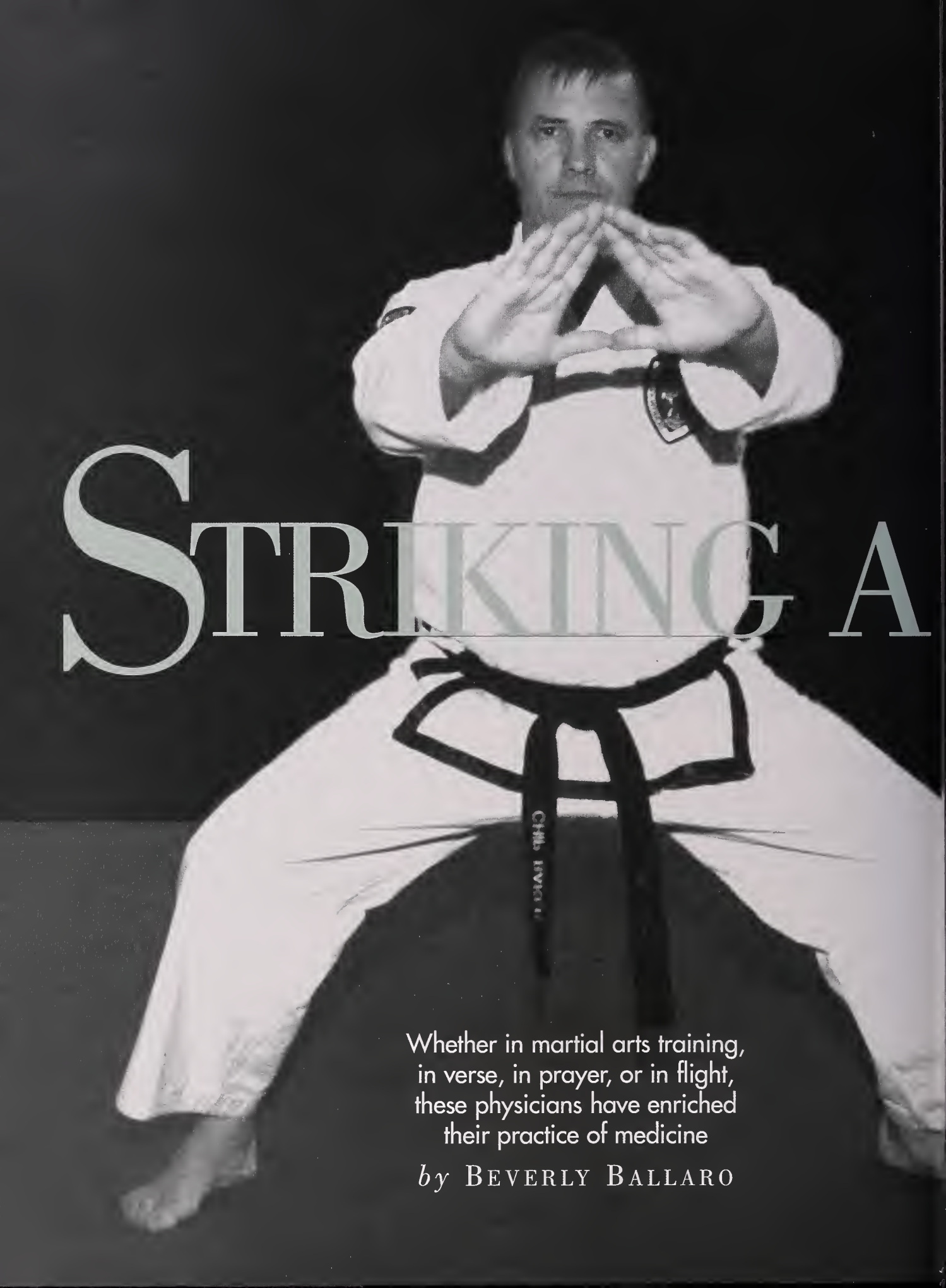
Second, the long art needed to implement the science has an equal allure: how do we reach out to bring the best of medicine to those who are living in abject poverty on the margins of our society?

The nursing profession, so often our muse in medicine, imparts a third blessing with a simple observation. Health care for the disenfranchised is predicated upon a one-to-one relationship made possible only by the investment of time and a willingness to venture beyond offices and exam rooms to unfamiliar turf. Caring for the homeless allows me to engage in many of the very human activities that had originally enticed me into becoming a doctor: to listen to stories, to be available, to share in sorrows and joys, to ease suffering, to make an occasional difference. The layered paradox of an urban service delivery model that imitates the inefficient style of the country doctor is difficult to escape: care is best brought to homeless people and families by "home" visits—in the shelters and on the streets.

A fourth blessing comes with learning to do no harm. BHCHP doctors often feel a paralyzing sense of anger and discouragement during the first year on the job. Despite Herculean efforts aimed at finding safe and affordable housing, the cycle of homelessness can seem intractable, our efforts hopeless, and our advocacy futile. Homelessness is a prism that refracts society's most vexing problems, and the solution will require fundamental reform in housing, health care, welfare, education, and corrections. When our clinicians embrace a goal of healing, the burden of changing lives evaporates in the joy of knowing stories and easing pain and suffering.

The final blessing is an embarrassment of riches for which I am deeply grateful. During residency, I noticed that those caring for marginalized populations risked becoming marginalized within the medical profession. Several guardian angels assuaged my fears, assuring me that this would not happen. The importance of the collegiality and encouragement of many remarkable physicians, teachers, and friends cannot be overstated, and I offer heartfelt thanks. Indeed, how could any life succumb to ennui surrounded by such munificence? ■

James J. O'Connell '82 is president of the Boston Health Care for the Homeless Program and a member of the Department of Medicine at Massachusetts General Hospital.



STRIKING A

Whether in martial arts training, in verse, in prayer, or in flight, these physicians have enriched their practice of medicine

by BEVERLY BALLARO

Christopher "Chip" Baker '74

BALANCE

CHRISTOPHER "CHIP" BAKER '74 IS A study in contrasts. As a surgeon specializing in trauma and critical care, he regularly treats the aftermath of human adventures, athletic competitions, and conflicts gone awry. Nonetheless, Baker finds himself drawn to the same types of high-adrenaline pursuits—skiing, scuba diving, and martial arts sparring—that can bring his patients rushing through emergency room doors. At the same time, this third-degree black belt in the ancient Korean fighting art of tae kwon do cultivates the gentle arts of rose gardening, tai chi, and bonsai.

For Baker, it is all a question of balance. "Ironically, the experience of growing older has made me, in some respects, more like a child," he says. "Preserving a sense of wonder about the world and dedicating time to appreciating nature and people have made me a happier person and a better doctor."

When Baker first began to cultivate an interest in the martial arts, he did not envision a crossover between this hobby and his work as a physician. Yet, in colorful writings such as "Zen and the Art of Surgery" and "Peregrinations of a Samurai Surgeon," he recounts the many ways in which his career has benefited from his journey to third-degree black belt. "Being a successful trauma surgeon requires many of the same skills emphasized in the mar-

WARRIOR SURGEON: By incorporating the martial arts into the healing arts, Christopher "Chip" Baker '74 has found strategies for maintaining his energy and focus in the operating room.

tial arts," Baker explains. "Whether in the emergency room or the *dojo*, you're operating under the harrowing pressure of necessity—of saving someone's life or of defending your own—and you need to be flexible to find solutions."

The education of young surgeons-in-training has provided Baker with another source of professional renewal—and another realm in which to apply martial arts skills. The training paths of white-coated residents and white-belted fighting arts novices bear striking similarities, Baker points out. Both paths instill self-confidence, compel students to reach for their greatest potential, and require extraordinary degrees of concentration and self-discipline. Both groups of trainees ascend a hierarchical ladder of skill, risk, and responsibility. And both residents and white belts learn first by watching and then by doing.

In martial arts and surgery, Baker points out, repetitive practice is crucial. The tae kwon do novice begins with the basic elements of punches and kicks and, once these are mastered, moves on to forms and, eventually, sparring. The surgical resident learns to tie knots, develops suturing skills, and advances to increasingly more complicated procedures. Repetition renders execution second nature, thus liberating the mind of the martial artist or surgeon to concentrate on making complex decisions and responding to the unexpected.

Baker is a firm believer in the power of the human mind, especially as it can aid in the healing process. "Even though I am a surgeon, I try to practice a psychology of wellness," he says. "My goal is to help build up my patients' energies so that they can take control of their recovery. I am convinced of the Chinese claim that lying in a hospital bed saps people of their life force."

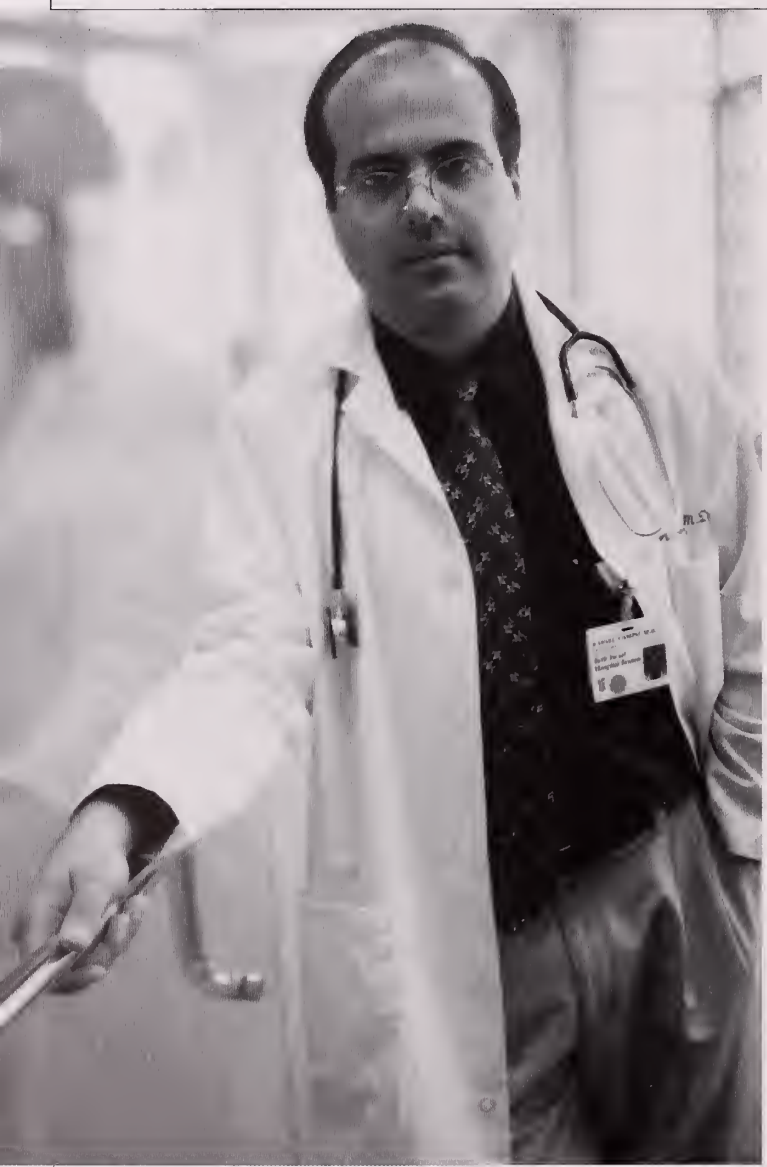


PHOTO: JOYCE RAVID

Poet in Motion

Rafael Campo '92

When he first arrived at HMS, Rafael Campo '92 found himself questioning the path he had chosen. "I was worried," he recalls, "that my interest in spiritual life would brand me an outsider in such a science-oriented environment. Then I feared that my Latino heritage might present a problem. I was convinced that my biggest obstacle, however, would arise from defining myself openly as a gay man." As it turned out, none of these aspects of Campo's identity caused much of a stir at HMS. "My worst offense," Campo laughs, "turned out to be one I had never anticipated: being a poet."

Campo speculates that, to the minds of some, poetry is associated with a kind of "touchy feeliness" that marks it as suspect. More to the heart of the matter, he believes that poetry's power to lay bare the truth disquiets physicians who seek to explain phenomena in rational terms.

But the therapeutic applications of poetry, Campo says, lie precisely in that border territory where scientific explanations and medical interventions fall short. "There is an essential difference," he says, "between curing and healing. Medicine can cure many diseases, and that is wonderful. But poetry, while it doesn't cure cancer or AIDS, can act as a powerful healing agent. This is especially true for patients who have exhausted the limits of what medicine can offer. When it's just my patient dying in a hospice and me, poetry is often the most potent treatment available, not just because its rhythms soothe, but especially because it tries to make sense of pain and suffering."

In Baker's experience, a patient's life force or *chi*, as the Chinese refer to the vital energy contained in every living being, is no arcane philosophical abstraction but a tangible, crucial element in the healing process. Baker himself has witnessed astounding displays of this energy by tai chi masters. He quickly adds, however, that the healing possibilities of such energy are not limited to the Eastern masters.

"The potential exhibited by the masters exists within us all," Baker says. "Tapping into that same force is what empowers a 110-pound woman to lift a car that has her child pinned underneath."

As an experienced trauma surgeon, Baker understands the pressures of being pushed beyond the limits of what one thinks is possible. When encouraging trauma patients in recovery, or mentoring surgical residents at various levels, he sometimes reflects on the time he was attending a martial arts testing session and his instructor suddenly announced, "Dr. Baker will now break four boards with a side kick!" He had never actually broken more than two boards before and had never even attempted four. Nonetheless, Baker was determined neither to disappoint his teacher nor to embarrass himself, and broke all four boards with ease. Afterward, when he told his teacher how startled he had been, the instructor smiled and replied, "I've been watching your side kick. I thought you were ready."

"Had someone even suggested to me, 15 years earlier, that I would be breaking boards at all, I would have exclaimed, 'You're nuts!'" Baker laughs. "In surgery, whether you're a patient, operating room physician, or resident supervisor, it's all about pushing people further than they think they can go. And saying to a resident, 'You're ready,' and then watching that individual outperform expectations is one of the great satisfactions of a career in academic surgery."

Although he had consciously distanced himself from poetry in college and at HMS, Campo reforged this vital link during his residency when he had to confront human suffering firsthand. One of the first patients he encountered was a Latina grandmother whose breast cancer had already widely metastasized by the time she met Campo. In addition to sources of medical research about breast cancer, Campo suggested to her works by poets who portrayed their own struggles with the disease. To Campo's surprise, his patient arrived at their next appointment bearing her own poetry. The writing process, she told him, had given her great satisfaction and purpose, despite her poor prognosis. When she died, she left her poems to her grandchildren as a cherished record of her life.

The connection between poetry and healing, as well as the tremendous sense of rejuvenation poetry has brought to Campo and his patients, are themselves born of Campo's own process of renewal. "When I'm feeling drained, frustrated, and overwhelmed by the profession—by technology, HMOs, time constraints, and other pressures—poetry can really help refocus my energies," he says. "Even though the creative process itself can be taxing, the revitalization that comes out of it more than makes up for that expenditure of energy."

For Campo, the writing process facilitates a kind of rebirth in which he deliberately sheds his white-coat identity and opens himself to his patients and their stories of pain and suffering. "As a physician," he says, "you need, of course, to maintain a certain distance between yourself and the pain of your patients. Yet I find that we can take the desire to avoid over-identification too far, and we end up sealing ourselves off to an unhealthy degree. Poetry allows me to question these types of boundaries and, ultimately, puts me in better contact with my patients' experiences."

> "My worst offense," Campo laughs, "turned out to be one I had never anticipated: being a poet."

Campo's patients are well aware that their doctor is also a prominent poet; indeed, many of them seek him out precisely for that reason. Campo strongly believes that the medical profession urgently needs to integrate science and the humanities as complementary disciplines. "We're entering an era of scientific discovery that is thrilling, empowering, and yet dangerously prone to hubris," he says. "The knowledge base is expanding every day, yet the further we go in explaining all there is to know about what makes us human, the greater the risk of cold-hearted, passionless care. I welcome the path of inquiry that will, no doubt, lead us to cures for some of our most dread diseases. I just want to reinterpret science in poetic terms so that we can preserve some sense of mystery and wonder."

While celebrating medicine's search for exciting new therapies, Campo continues to embrace the ancient healing balm of poetry. He met one of his first patients, he recalls, over the course of several long hospital stays. The patient was a young man, suffering the effects of various end-stage AIDS diagnoses, including cytomegalovirus retinitis, which had impaired his vision. With little to offer his patient in the way of a cure, Campo used to stop by his room late at night and read poetry aloud to him. "Science may, one day give us the technical tools and knowledge to understand and prevent—or cure—tragedies such as this," he says. "But the human healing connection made in such an encounter will always belong to a different, timeless realm."

Faithful Healer

Renée Gardner '75

In caring for her young cancer patients, Renée Gardner '75 relies on advances in modern medicine and leaps of ancient faith. Treating children for serious, sometimes terminal, illness requires cutting-edge knowledge of a rapidly evolving discipline, as well as a hardiness of spirit that cannot be taught in medical school.

"In the field of pediatric oncology," says Gardner, "an extraordinary degree of intimacy builds up between you and your patients. You're following some of them over a very extended period of time, and you're dealing with issues that are literally about life and death. You've got to be willing to let yourself be touched by sadness and tragedy. But more than that, you have to be able to take a punch emotionally and remain standing."

For inspirational models, Gardner need look no further than her own young patients. "I generally find kids to be very courageous," she says. "Even young children can grasp what's at stake when they're seriously ill. Actually, in my experience, kids often handle life-threatening disease better than adults. Adults tend to have a lot of fatalism. But children, and teenagers in particular, just don't accept the prospect of death as quickly and readily." Ironically, Gardner speculates, adolescents' well-known belief in their own immortality, which can lead to disaster in other contexts, can become a source of remarkable hope and resilience in the face of a cancer diagnosis.

Fortunately for Gardner's patients, such a diagnosis no longer necessarily represents a death sentence; bearing witness to many patient success stories over the years, Gardner says, has played a key role in keeping her spirits and motivation high. While her greatest frustration remains diseases such as neuroblastoma and alveolar rhabdomyosarcoma, for which the grim prognosis has changed little in over a century of medical research, she is heartened by overall statistical trends.

She points out that, nowadays, for all types of childhood cancer, children have a 70 percent chance of beating their disease. With some cancers, the odds of survival can run as high as 90 to 95 percent. And the numbers only promise to improve. Gardner is particularly excited by the prospects opened up by the decoding of the human genome.

Yet how does this oncologist cope with the inevitable discouraging moments? Despite the stunning medical advances achieved this past century, and the promise of future scientific breakthroughs, there remains no shortage of challenges where medicine and science fall short. "I'm no wonder woman," insists Gardner. "I'm not always successful, and I do get tired. It can be very hard, very emotionally draining to lose young patients in quick succession. But looking within, and holding fast to my spiritual beliefs, is what enables me to stay focused and keep moving forward."

For Gardner, a rock-solid Christian faith represents her most important source of energy for sustenance and

Higher Flyer

David Mauritson '74

Why would patients suffering from arthritis, burns, or cancer turn to a cardiologist for help? When the cardiologist is David Mauritson '74, the delivery of care takes the form of the delivery of patients.

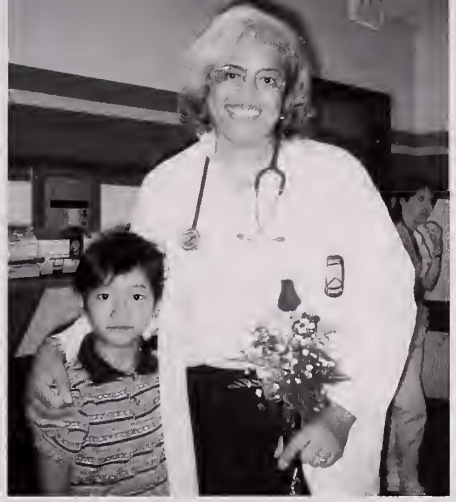
For the past seven years, Mauritson has donated his services as a volunteer pilot with AirLifeLine and, more recently, with Angel Flight Southeast. He averages six flights a year and has flown more than 40 missions since he began volunteering. His colleagues at Cardiology Associates of West Alabama have been generous in covering for him, to allow him to fly the missions. "I enjoy doing it, and I know I'm really helping people," Mauritson says. "The reward comes from assisting people in need and indulging in a passion—flying—in the process."

AirLifeLine is a national nonprofit organization based in Sacramento, California. Its pilots transport seriously ill patients who cannot

renewal as a physician and as a human being. The integration of her spirituality into her approach to patients flows naturally from her conviction that, as a Christian, she must strive to serve as an example of kindness, love, and compassion. What better opportunity to translate spiritual values into action than the care of very sick patients and their families?

One of the toughest such opportunities arises when Gardner must break bad news to parents. "I'm always totally honest with them, and some of them can find the information devastating," she says. "But I like to remind them that, despite the statistics we've compiled on overall cancer cure rates, every *individual's* chances of survival lie somewhere between zero and 100 percent. This leaves open an avenue of hope, because it's impossible to predict who's going to be a survivor. I promise them that our team will give their child's treatment our best possible effort, and then leave the rest to God."

In negotiating the boundaries of science and faith, Gardner joins an exploration shared by many patients' families.



"I generally find kids to be very courageous. Even young children can grasp what's at stake when they're seriously ill."

"Very often," Gardner says, "I encounter parents who are desperately grasping for answers, for hope. They may never have believed that faith is real; they may feel that their faith is now being seriously tested for the first time in their lives. In most cases, they are seeking some kind of anchorage."

To mitigate their bewilderment and despair, Gardner offers her perspectives both as a physician and a Christian. "I tell them that we are limited in terms of our outlook. It may well be beyond our human comprehension to understand what higher purpose, if any, a child's suffering serves."

Despite the harsh reality that not all children with cancer survive, Gardner interprets the process of caring for and befriending these children and their families as a blessing. Regardless of the outcome, she feels, she and the hospital staff are richer for having known them.

And occasionally, just occasionally, the unfathomable suffering of children can lead to sublime, some might argue divine, reprieves. "I had a patient," recalls Gardner, "who was diagnosed with B-cell leukemia at age eight. Scientific models gave him only a 25 percent chance of surviving, yet he celebrated his 13th birthday disease-free. I have another patient who presented, at age 16, with a cancer that had originated in his brain and then metastasized to his bones. According to all the medical literature, this young man should be dead. But he is now 22 and thriving. And, yes, I guess you could call that a miracle."

afford the cost of commercial travel to medical facilities far from home. More than 1,000 volunteer pilots from all walks of life donate their time, skills, planes, and fuel. Patients must be ambulatory and able to travel in an unpressurized plane without medical personnel or equipment during the flight. They are allowed to bring along one family member or support person, although, in the case of a sick child, both parents may travel.

Mauritson has flown all manner of patients to all types of destinations. He has taken people to Texas for chemotherapy and to North Carolina for arthritis treatments. He was once called upon to fly the first segment of a multi-leg journey for a young Boston man whose shattered femur had left him stranded in Mississippi with no way of returning home.

Children, Mauritson says, have provided him with his most touching experiences as a volunteer pilot. He has transported a fair number of youngsters under the age of ten to the Shriners Burn Institute in Galveston, Texas. Setting children literally on the journey to recovery—and the promise of a healthier future—fills Mauritson with hope and a powerfully renewed sense of purpose.

This spirit of renewal is shared by the families whose gratitude is outweighed perhaps only by the excitement of Mauritson's young passengers. For many of them, exploring the wild blue yonder in his Commander 114 four-seat, single-engine plane represents the first flight they've ever taken. "Amazingly," Mauritson says, "not one patient has ever gotten airsick on one of my missions."

The smooth flights reflect skills born of long experience, stretching back to Mauritson's teenage days. For Mauritson, flying has always been a family affair. He took his first flying lessons at the age of 16 from his mother, a flight instructor and inductee into the Oklahoma Aviation Hall of Fame. His father was also a pilot—as well as a physician. Mauritson has passed the gift of flight on to his own son and daughter, both of whom are licensed pilots. His wife, he adds, is the only member of the family not eager to climb behind the controls of a plane.

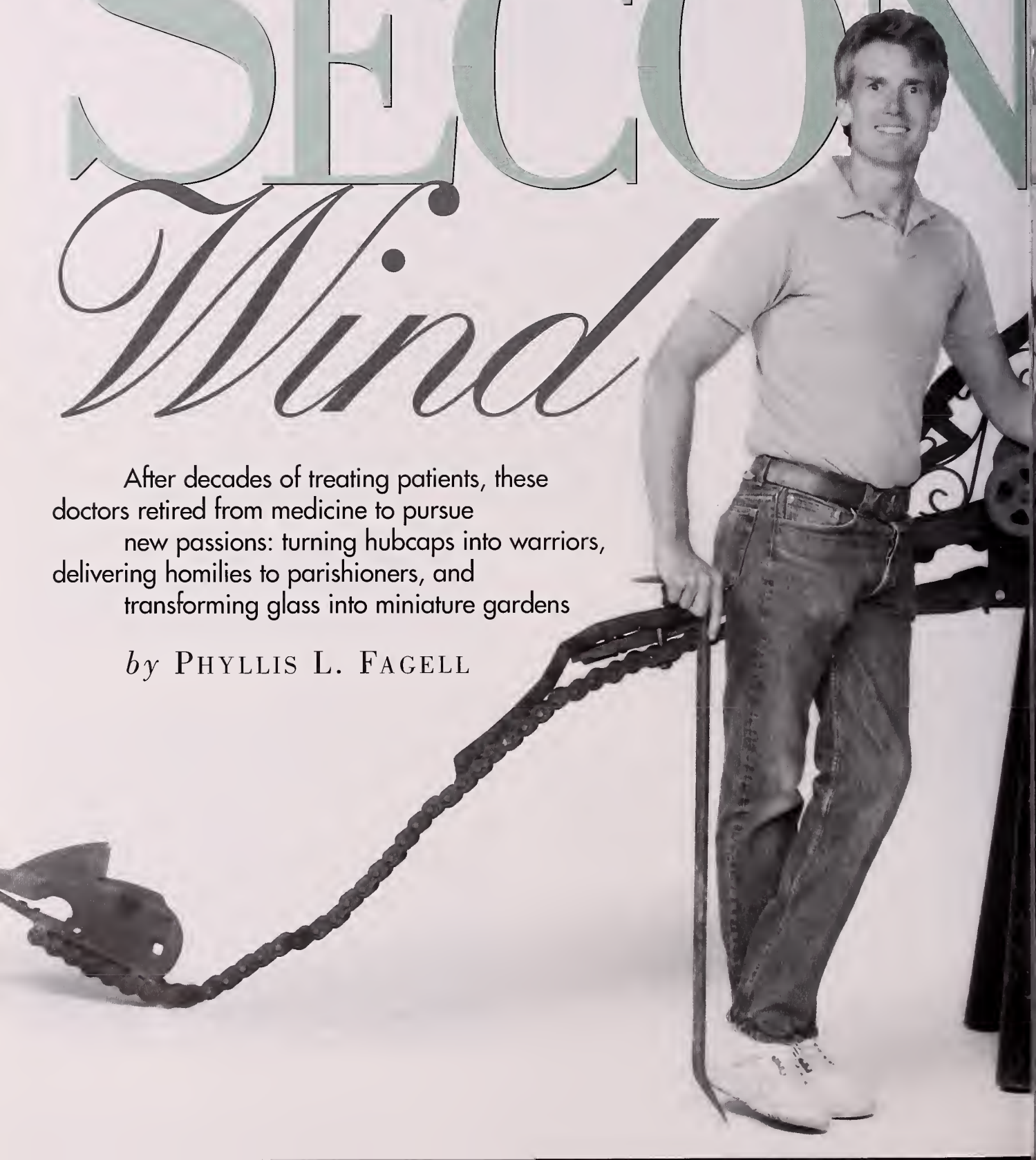
Mauritson would like to generate more awareness among physicians of the services provided by volunteer pilot groups such as AirLifeLine and AirAlliance, the loose association of various national and regional groups. "And, naturally," he adds, "we're always looking for a few good pilots to volunteer." ■

Beverly Ballaro is assistant editor of the Harvard Medical Alumni Bulletin.

SECOND Wind

After decades of treating patients, these doctors retired from medicine to pursue new passions: turning hubcaps into warriors, delivering homilies to parishioners, and transforming glass into miniature gardens

by PHYLLIS L. FAGELL



Hardy Jones '73

AFTER A SUCCESSFUL 20-YEAR career as an orthopedic surgeon, sculpting bone to exact specifications, Hardy Jones '73 has delved into a much less precise art form. These days, he crafts asymmetrical creatures, welding scrap metal into whimsical dragons, dancers, unicorns, and fish.

"Orthopedic surgery and the type of metal sculpting I do are similar in many ways," Jones says. "They both involve working with my hands, and I use an artistic judgment in solving problems orthopedically. In orthopedics, though, patients aren't quite as thrilled when their legs aren't the same length."

The story of Jones's journey from operating room to art studio began in 1967. Just months before he was supposed to attend HMS, a devastating motorcycle accident injured his brain stem, crushed his left leg, and left him in a coma for two weeks. "When I woke up," Jones says, "I was paralyzed on the right side of my body, and I had slurred speech and significant memory loss." His long recuperation and experience as a patient, he adds, "significantly contributed to my choice of a medical specialty and my style of practice."

Jones fully recovered from the neurological injuries, and he finally made it to HMS two years later. His orthopedic problems, however, were chronic. "I had complications that required long-term antibiotics and repeat surgeries," he says. As a medical student, he

SHIFTING GEARS: Hardy Jones '73 stands in front of "Junk Yard Dragon." Each of his sculptures is unique, composed of metal parts ranging from plow disks to faucet handles to truck and railroad yard fittings.

ART ATTACK: Jones's sculptures "Pony Express" (top) and "Pescado Angelito" (bottom). He rearranges and welds metal parts to bring his creations to life as dancers, animals, or warriors.

was on crutches for two years and briefly used a wheelchair.

Despite his physical challenges, Jones launched a productive and rewarding career as an orthopedic surgeon, becoming chair of his department at Santa Clara Kaiser. "I was able to practice the type of medicine that brought me happiness, not only in terms of the professional challenge, but also in terms of keeping promises I had made to myself when I was a patient," he says. "I think I was a kind and gentle physician, and I have no regrets."

Jones knew, however, that his body might not always be able to keep up with the physically demanding schedule he kept as a surgeon. "I was told 30 years ago that I would have problems later in life, and now I'm living later in life," he says. "I'm paying the price of significantly worn hip and knee joints."

Since his retirement at age 52, Jones says, "My cup has runneth over. I now get to follow the road not taken. I feel freed emotionally and spiritually to pursue my artistic desires without a guilty conscience. I enjoyed the patient contact, the teaching, the collegial interaction, and the stimulation of medicine. But I also was able to go out on top, with people standing and clapping, rather than focusing on my increasing limitations."

The transition was made with the support of his wife, Jane, whom he married the summer he began medical school. "We have raised our children, launched our careers, and traveled through life together," he says. "She helped me organize my options and ultimately retire from medical practice."

Although Jones has no formal art training, in a sense he has been studying found-metal sculpture his entire life. As a child, he would leave the beach with his pockets full of pebbles, or return from railroad tracks lugging spikes, washers, screws, and bolts. "Artists who paint need easels and palette boards—all the purples, blues, and oranges," he says. "I have a junk pile." Just as he did as a boy, he ventures into the country for his materials, scouring old barnyards for automotive parts, industrial scrap metal, broken farm equipment, and discarded tools. "Prospecting for rusty metal treasures is a crucial part of my art career," he says.

Jones's life-size pieces are neither abstract nor entirely realistic. In one of his sculptures, a warrior's shield is a hubcap, his right arm the steering linkage from a Chevrolet, and his knee cap a tractor gear. Jones once created a half-acre piece called "Rock Band" made out of old stove parts, telephone cable, and large chunks of driftwood.

These days, Jones works out of his home, using dollies to move sculpture and working at a welding bench. "I've managed to design my art studio so I don't have to do any heavy lifting," he says. Over the years, he has made hundreds of sculptures and won numerous awards. More than 20 of his pieces are displayed in public places in Santa Clara County and the Silicon Valley, where he lives.

"I try to capture the essence of an animal or dancer, the spirit of the piece, without effort, to have it just pass through me," Jones says. "It's a delight when I have finished a sculpture and can enjoy the outcome."

Although sculpting a prosthesis to fit a deformed joint can be as creative as sculpting metal, Jones says, "the difference is the intensity. My art is open-ended and flexible. Orthopedics is rigorous and unforgiving, and you can't walk away from your mistakes. In my art, I'm often working on three or four sculptures simultaneously, and I can leave one or more unfinished until I find the right part for it. It's not a stress, it's a discovery, and a counterpart to the intensity of a medical career.

"I made two great decisions in my career," Jones adds. "One was to go into medicine, the second was to retire from medicine. I regret my body's limitations, but I now have a wonderful opportunity."

MAN OF THE CLOTH: Richard Senghas '54 poses with his 12 grandchildren at his ordination ceremony. Senghas entered the priesthood after more than 30 years of practicing medicine.

HIGHER *Calling*

Richard Senghas '54

AFTER MORE THAN 30 YEARS OF PRACTICING MEDICINE, RICHARD Senghas '54 now answers to "Father" instead of "Doctor." Once an orthopedic surgeon, now a Roman Catholic priest and pastor of St. Rose of Lima Church in Jay, Maine, Senghas says he realizes "it's not a common life, having worked as both a physician and a priest." He was called to the ministry after his wife, June, also a member of the Class of 1954, died in 1993. They had met at HMS in anatomy class, when they worked on neighboring cadavers. "After June died, I realized, much to my surprise, that I could be happy as a celibate," Senghas says. "And then I realized I might be called to be a priest. It was a gradual realization."

The transition was natural, Senghas adds. "Both are people-oriented vocations. As a priest, I'm here to bring the sacraments and the word of God for the spiritual life of my people. As a physician, I worked to improve my patients' physical condition. My medical experience makes me more inclined to think about what is going on under the surface in my parishioners, from their family life to their physical condition to their mental state."

Because of his medical background, Senghas also feels at ease visiting parishioners in the hospital. Sometimes, he says, he even finds himself staring at their monitors, but he is careful not to turn parishioners into patients. "I've had many suspicions of diagnoses, either mental or physical," he says. "If I see parishioners who need medical care, I will encourage them to seek help. Once in a while, a parishioner will ask me a medical question, but I just smile and say, 'Sorry, I've given up my license.' You can't mix the two professions. With the demands of the priesthood and medicine, it would be difficult to do justice to them both."

Senghas says he felt no great struggle about leaving medicine behind. "I miss the familiarity of medicine the way you

miss an old friend," he explains. "It was gratifying helping people, although when the telephone rings at one in the morning with an announcement that there are three seriously injured people with open fractures, those are not moments of happiness. But I didn't get tired of medicine; I simply had a second calling to the ministry. It is equally satisfying for me to heal someone spiritually as physically."

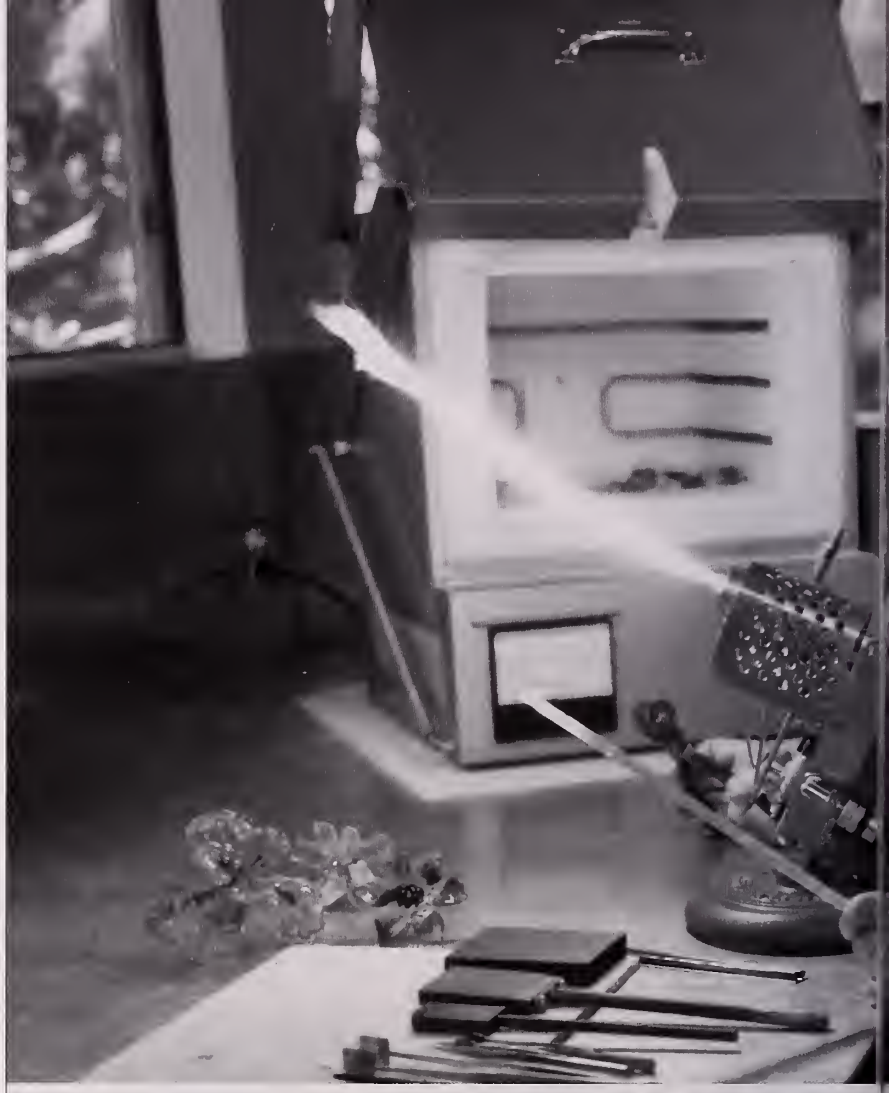
Senghas began his four-year program as a seminarian at the Pope John XXIII National Seminary, a program for older men, in 1995. "There were doctors, lawyers, and professors in my class," Senghas recalls. "For all of us it was a calling." He shared accommodations with a former pathologist who also was a widower. "I think they put us together so that if we talked shop, we wouldn't offend the others."

The program was rigorous, Senghas adds. "In the same way that a physician studies sciences such as pharmacology, physiology, and psychology to help patients, a priest integrates the studies of theology, ecclesiology, and scripture to work with parishioners. In both medicine and the ministry, this integration takes place on an almost intuitive level. You need academic skills in both vocations, but you also have to be able to work with others in a close, personal way."

Senghas's seven grown children and 12 grandchildren have been very supportive of his decision, but one grandchild was disconcerted by Senghas's ordination ceremony. "I had to lie face down in front of the altar for part of the ceremony," he says, "and one of my grandsons, sitting in the front row, called out, 'Is Grandpa okay? Someone go help Grandpa!'"

Occasionally, Senghas's past life as a married doctor has confused parishioners. "One woman who came to Mass stopped suddenly at the door," he says. "She thought she had gone to the wrong church because she heard me mention my wife in my homily."

Throughout both careers, Senghas adds, "the most important thing in my life has been my faith. I'm just more aware of it now. Even later in life, we have to remain open to what God is calling us to do."



Artistic Renewal

Lois Barth Epstein '59

After 27 years of practicing medicine, Lois Barth Epstein '59 traded in her stethoscope for a propane-fueled torch and her laboratory for an art studio. She now works full time as a flameworker, transforming molten glass into delicate flowers and intricate objects. "I derived tremendous gratification from my academic career," Epstein says, noting that her interests spanned basic science, cancer research, pediatric immunology, administration, and teaching at the University of California at San Francisco. But her focus changed in 1993, when her husband, Charles Epstein '59, a geneticist and former editor of the *American Journal of Human Genetics*, was nearly killed by a bomb sent to their house by the Unabomber. "I felt I needed to spend more time with Charlie and help in his recovery," she says.

Epstein took early retirement and turned to glassblowing, an art she had first encountered two decades earlier, when she took a course at the London Glass House. "I remember my husband and three sons cheering me on as I swung a blow pipe around to make a colorful plate," she says. But it wasn't until 1989, when her mother died, that she began working with glass again. "I was so deeply affected by her death that I felt I needed to do something with

TOOLS OF THE TRADE: Lois Barth Epstein '59 uses annealers and a torch to transform molten glass into delicate flowers and mosaic objects. She named her studio "Verretas," which not only means "heaps of glass" in French, but also plays on Harvard's "Veritas."

PHOTO: MICHAEL SEXTON

my hands to help with the grieving process," Epstein says. While still maintaining an active career in medicine, she took a course in stained glass. She then was accepted into the Pilchuck Glass School near Seattle, where she learned coldworking—how to sandblast and engrave on glass—and began designing pieces for other glassblowers to create.

Then, in 1993, while Epstein was on a site visit in Cleveland, she was called out of a meeting. "A neighbor phoned to tell me that a bomb sent through the mail had exploded in Charlie's hands," Epstein recalls. "He told me he wasn't sure if Charlie would survive." She immediately flew home to San Francisco. "When I arrived, the first thing I saw was a newspaper with a photograph of our shattered kitchen on the front page.

"Charlie was in surgery for nine hours," Epstein says. "He later had three surgical procedures to make new eardrums, since the explosion had left him totally deaf." Subsequently, an eleven-hour nerve transplant operation restored some function to his right arm. "For the first two years after the accident," she says, "my total preoccupation was helping my husband."

Epstein decided to return to Pilchuck to learn how to make mosaics with glass tiles. To inspire Charlie, who had been an accomplished cellist, she made him a mosaic cello. "Symbolically, I wanted to hand him back his cello in the hope that one day he would play again," she says. The creative process was therapeutic, just as it had been after her mother's death. "When you're working with your hands, you lose yourself in what you're doing."

Today, despite the fact that he lost the tips of several fingers on his right hand, Charlie plays the cello in the Bohemian Club Orchestra in California. "He's a bionic man," Epstein says. "He's been restored, but he will have physical therapy on his hands for the rest of his life. Luckily, his mind was not affected, and he has shown tremendous courage throughout all of this."

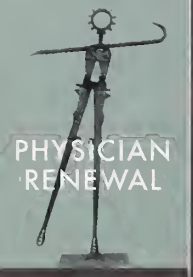
As Charlie recovered and Epstein delved more deeply into her new career, she felt she needed to home in on a specific type of glass art. "I was over 60, and it was hard work to lift the pontil, the tool used to gather molten glass from the furnace," she explains. "I simply wasn't agile or strong enough to do glassblowing on a large scale." So she decided to study flameworking—using a torch to make objects from molten glass—at the Penland School of Crafts and the studio at the Corning Museum of Glass. Then she set up a studio in her garage, complete with a propane- and oxygen-fueled torch, annealers, and vented hood.

Epstein is now working on a glass garden and mosaic tile floor for a dollhouse that Charlie is building. Although many people have tried to commission her work, "I have not accepted any yet," she says. "I am trying to build a body of work to exhibit that has been developed in my own studio, rather than in a school."

Epstein has on occasion questioned her career shift. While in residence at the Villa Serbelloni—a study center in Bellagio, Italy, for academicians from around the world—she found herself sitting at dinner between two men actively involved in public health in Bangkok. "I explained to them that the gratification I get from doing art is very personal and self-absorbed, whereas in medicine I helped many more people and my impact was greater," she says. "One of the men told me that in Buddhism, art is healing, not only for those who produce it, but for those who appreciate its beauty. He was trying to explain that there isn't necessarily a disconnect between medicine and art." Yet after spending that evening discussing the problems of health care delivery in developing countries, Epstein realized that "even though I'm 66, I might see what opportunities are available to me in the field of international health.

"People need to follow their dreams," she adds. "If they have an artistic bent, or are into literature or religion, they should go for it. There are opportunities for several careers in a lifetime." ■

Phyllis L. Fagell is associate editor of the Harvard Medical Alumni Bulletin.

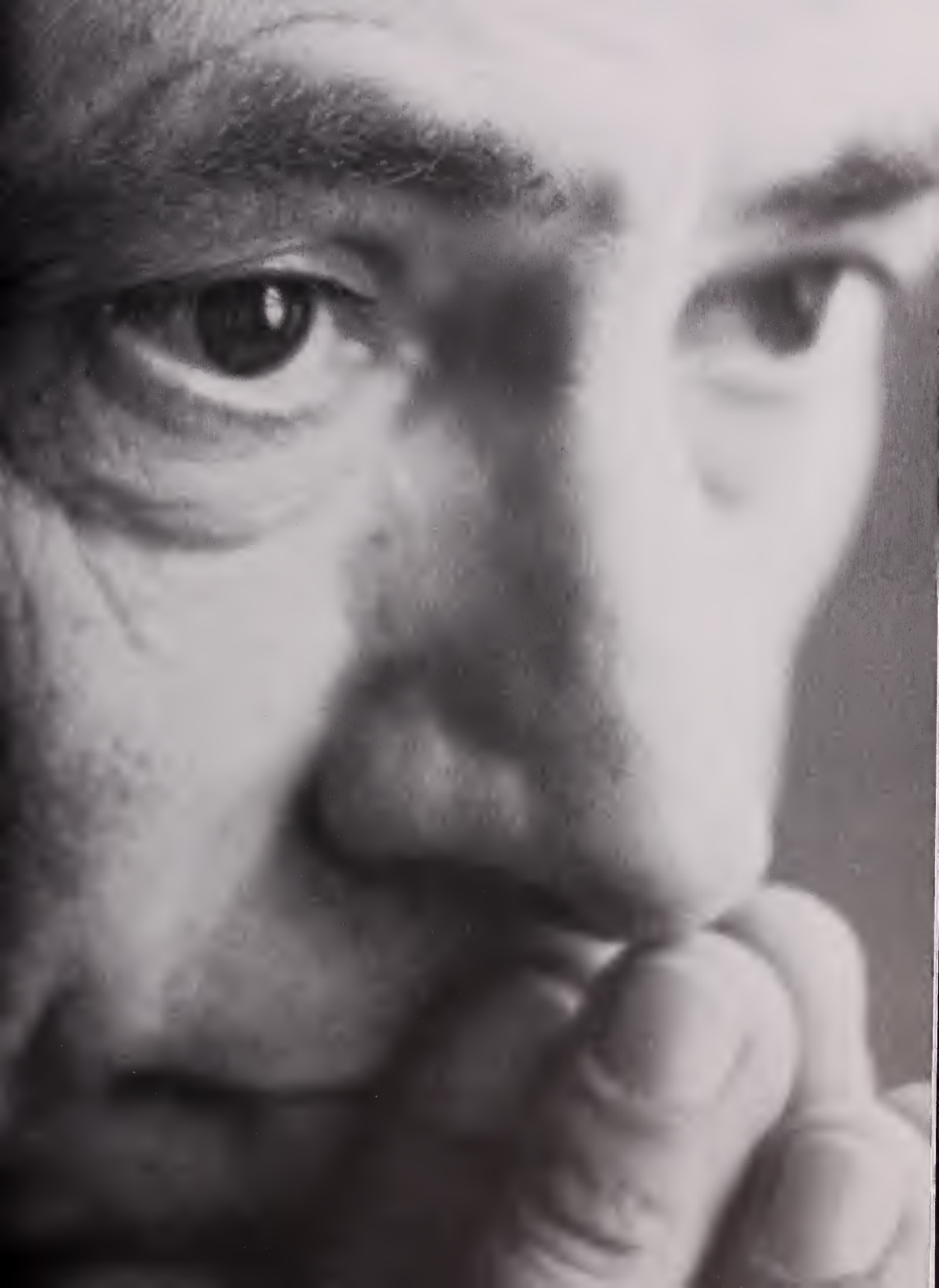


Wisdom of the Aged

by Eric B. Larson

By drawing on the same techniques that foster successful aging, doctors can thrive—not just survive—in medicine

PHYSICIANS TODAY FREQUENTLY FIND THEMSELVES embattled, clinging to professional survival, or even ready to abandon the medical field in frustration and despair. Yet doctors searching for ways to adapt to recent dramatic changes in medicine can turn to a surprising new source. Lessons gleaned from research into aging can offer models for thriving, not just surviving, in medicine.



o thrive in medicine, we must focus on what we can

Scientists and lay people can view the term "successful aging" quite differently. Perhaps the most basic elements of any such definition are maintaining satisfaction and retaining control of one's life. But successful—as opposed to usual—aging may require more specifically the abilities to minimize decline and to adapt effectively to change and loss. Some people may even experience what might be termed "optimal" aging: they are able to maintain elite levels of performance and function as they grow older.

Similarly, individual interpretations of what it means to thrive in medicine can color physicians' feelings about their work. Most doctors would identify a sense of gratitude for the privilege of being a physician and a commitment to the mission of medicine as fundamental to the definition of "thriving." Beyond the basics, however, there are many possible ways to expand this definition. In one poignant example, a general physician in a small Wisconsin town found himself in a state of despair shortly after he retired. When he discovered that he could apply his profound medical knowledge and familiarity with his community to teaching and volunteering, he experienced a rebirth of his self-worth and a restoration of his identity as a professional.

Measures of Success

Longitudinal studies of physical function in aging have shown that steady decline is not an inexorable reality: as we grow older, we go through periods of improvement as well as periods of decline. Productivity for some tasks may actually increase with time and experience. Catastrophic illness, psychosocial factors, and changes in mastery—rather than chronological age per se—all play pivotal roles. Yet if productivity is an important metric for a physician, it is not the only one; certainly income should not be the most important driving force or measure of professional success. Physicians who do not want to be disappointed in today's marketplace may need to focus on the quality of patient care, which often depends not only on their learning new skills and information, but also on their being able to do more for patients as medical science continues to provide better treatments.

Other factors that play key roles in thriving include physical exercise, emotional support from social networks, and purposeful activity. Although one might expect physicians, of all people, to recognize these needs, there is abundant evidence, both in the literature and from direct observation, that many professionals ignore their own needs. Why? It may be that, because of our medical training, we tend to work harder in order to be more productive and thus fail to make the time to cultivate the healthy habits that can, ironically, help boost our productivity.

Two of the most important determinants of both successful aging and physician satisfaction are musculoskeletal function and cognition. The preservation of musculoskeletal function requires regular physical activity, self-management techniques—especially to combat osteoarthritis—and avoidance of the inactivity that such psychomotor drugs as benzodiazepines and alcohol can promote. Maintaining good health also helps preserve cognitive function; on this front, at least, physicians have a good head start, since educational achievement is one of the strongest predictors of cognitive function. To build on our advantage and enhance our ability to thrive, we should commit ourselves to lifelong learning through self-directed study, formal continuing medical education, or research. Emotional health factors play an important role as well: depression and anxiety are associated with lower cognitive function, whereas self-efficacy—the confidence that one has the skills and ability to take care of oneself—predicts the opposite.

Meaningful, habitual professional activity, continued involvement in medical societies and medical staff activities, and the preservation of professional autonomy also are critical to physician satisfaction. Community involvement allows doctors to avoid marginalizing themselves or being marginalized by others. Retired physicians can tap into their knowledge and skills in innumerable ways, as illustrated by the Dover Free Clinic, established by Robert Zufall '47 and his wife, Kay. The clinic primarily relies

◆ [redacted]

P.O. Box 2035
Healdsburg, CA 95448
Phone: 707-431-8835
Fax: 707-433-8092
Email: rpolidora@lake.org
Aviva! Wellness Institute's major program, "Self-Care Skills for Physicians: Balancing Service and Self-Care," is an experiential training program for physicians and physician-couples.

◆ [redacted]

37922 55th Avenue South
Auburn, WA 98001
Phone: 253-351-8577
Fax: 253-351-8576
Email: mdrenew@aol.com
The Center for Physician Renewal, founded by Todd Pearson, MD, is devoted to helping peo-

contribute, not just on our material and professional needs.

on recently retired physician-volunteers to serve a predominantly Latino, uninsured community outside of Newark, New Jersey. The Zufalls have described their work there as the most gratifying professional activity of their entire lives.

Keeping up morale is another important strategy for maximizing quality of life. Older people who maintain good morale tend not to base their self-esteem on comparisons with others.

Maintenance of certain social networks also is crucial for those who age successfully, although the size of the network is not as important as the selectivity and quality of the interaction. Avenues for both giving and receiving support are critical. In one study, helping others was the strongest predictor of self-esteem. Finally, religion often provides meaning in the face of uncertainty.

Achieving Equanimity

As the world of medicine continues to evolve, we will need to choose our goals carefully—working to improve what is amenable to change, occasionally accepting things we do not like, but always persevering in our mission. Ideally, we will also recognize what cannot be changed, ensuring that the goals we set are attainable.

Medicine remains a great profession, loved, for the most part, by those fortunate enough to be physicians, particularly those committed to service, science, and professionalism. To thrive in medicine, of course, we must focus on what we can contribute, not just on our material and professional needs. This means that, for our patients as well as ourselves, we should take the time to maintain and improve our knowledge and skills, as well as our physical and emotional health. And in hard times, we must strive to achieve that unique quality—equanimity in our profession. ■

Eric B. Larson '73 is medical director of the University of Washington Medical Center in Seattle. He is also associate dean for clinical affairs and professor of medicine in the University of Washington School of Medicine.

renewal resources

ple and health care organizations reconnect to their most authentic sense of identity, meaning, and purpose. The center is dedicated to those interested in cultivating personal and professional renewal, and in deepening their understanding of the link between their inner lives and engagement with the outer world of service and their life work.

555 Bryant Street
Suite 160
Palo Alto, CA 94301
Phone: 800-377-1096
Fax: 650-329-1887
www.cppr.com
The Center for Professional

and Personal Renewal is devoted to the support and revitalization of health care professionals and organizations. Founder and director Peter Maskowitz, MD, offers a range of services, including on-site and remote career and life coaching for physicians anticipating career transition, workshops and seminars, and consultation to health care organizations.

21 West Colony Place
Suite 150
Durham, NC 27705
Phone: 919-489-9167
Fax: 919-419-0011
www.cpwb.org

The Center for Professional Well-Being, directed by John-Henry Pfifferling, PhD, provides practice diagnoses, coaching, and counseling assistance to promote physician morale and revitalization, and to reduce the risk of compassion fatigue and burnout.

99 Babcock Street, Suite 2
Brookline, MA 02446
Phone: 617-713-3688
Fax: 617-713-3776
www.mdintellinet.com
MD IntelliNet, under the leadership of Gigi Hirsch, MD, helps physicians enhance their professional satisfaction through career diversification and transitions into non-patient care roles within health care. MD IntelliNet provides part-time and full-time placement opportunities, as well as strategic career consultations.

P.O. Box 829
Topeka, KS 66601
Phone: 800-288-5357
Fax: 913-648-3155
www.menninger.edu
The Menninger Leadership Center offers seminars, workshops, and consultations for physicians who are in transition, under stress, or balancing work and family.

FRAGILE CARGO: The HMS physicians who went to Australia in 1942 quickly gained fame as the "Harvard Unit." Ambulances such as this one were used to transport many of their patients.

WHEN HMS WENT TO WAR

In WWII, a generation of Harvard doctors answered the call to duty

"BRILLIANT U.S. SURGEONS STAFF ARMY HOSPITAL," TRUMPETED THE JULY 24, 1942 headline of Brisbane, Australia's local newspaper. "One of America's most brilliant collection of surgeons and physicians," the article gushed, "is gathered in a small northern town ready to operate in what will be one of the largest hospitals, civil or army, in the southern hemisphere. They are members of the famous Harvard unit, and each is a professor in his particular branch of medical science.

"The Harvard unit is regarded as one of the finest bodies of medical men ever to have left the United States," the article went on to state. "Many of the surgeons have carried out or consulted at operations on famous Americans, but are loathe to discuss them, shying violently when [asked] if perhaps they had treated world figures such as film stars."

by BEVERLY BALLARO

Bemused members of the 105th General Hospital quickly adopted

Bemused members of the 105th General Hospital quickly adopted "Every man a professor!" as their tongue-in-cheek rallying cry. Despite their self-effacing attitude, the physicians who set sail for Australia in May 1942 were a proud and determined group who served their country throughout the Second World War. They represented the largest group of HMS doctors ever to go overseas as a general hospital, and quickly gained fame in the Southwest Pacific as "The Harvard Unit."

Paper Tiger

The 105th General Hospital traced its origins to a time well before Pearl Harbor precipitated the American entry into World War II. It began as the brainchild of a group of men drawn from the staffs of HMS and its associated hospitals, including some veterans who had served as junior members with the Harvard-affiliated 5th Base Hospital in France during the First World War. These men met in the Peter Bent Brigham Hospital auditorium and began drawing up plans for a new general hospital, modeled after its World War I predecessor. By 1940, HMS had submitted to the surgeon general of the U.S. Army a tentative roster of physicians who would form the professional staff of a contemplated 1,000-bed general hospital.

When the Japanese attacked Pearl Harbor, the doctors of the 105th knew that the call to duty was imminent. They were alerted on Christmas Eve and given two weeks to close out their practices and buy uniforms and equipment.

Among those who got the call to serve was Robert Snow '35. "After Pearl Harbor, I knew it was just a matter of time until I would join the action," he says. "I had already bought my own uniform and foot locker from an Army store in Boston. On Christmas Day, my wife and I were attending a cocktail party. We were just about to head home when one of the guests stopped me and told me that another member of the 105th had received his orders the day before. 'They've been trying to reach you by telephone all day long!' he told me. Because I was the junior man in my practice, I had spent all of Christmas Day doing rounds at no fewer than six different hospitals. I immediately phoned Dr. John Newell [HMS Class of 1930] and asked, 'Are we really going to war?' 'You sure are!' came his reply, and a great cheer of excitement went up at the party when I relayed the news. It's hard to describe the level of patriotism and morale that existed in that era."

Snow and his fellow members of the 105th traveled to Fort Lewis, Washington, where they were joined by nurses and enlisted personnel. They also acquired all the equipment necessary to get a general hospital up and running, and then proceeded to San Francisco, where they picked up the bulk of their medical library from local booksellers. There they found themselves housed on the outskirts of the city in a large building formerly used for livestock and surrounded by an old greyhound racetrack. Anxious to escape these accommodations, which they none too affectionately dubbed "The Cow Palace," the men speculated feverishly about where they might be headed and chafed with impatience to join the action.

Danger on the High Seas

The men of the 105th got their wish when they set sail on the U.S.S. *West Point*, a converted luxury liner, on May 19, 1942. Their relief mingled with nervousness as they passed under the Golden Gate Bridge. The *West Point* was considered the queen of the merchant marine—the newest, finest, and largest American luxury liner afloat—but also the most important naval prize sought by Japanese planes and German submarines. The men of the 105th knew that her precious cargo of medical personnel and supplies made the *West Point* all the more tempting a target.

PHOTOS (TOP LEFT AND TOP RIGHT): COURTESY OF THE HARVARD MEDICAL LIBRARY IN THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE

But the expected naval escort never materialized; the *West Point* relied on her great speed for her own protection.

Although the *West Point* had been intended for elite North American passenger service, conditions on board were anything but glamorous. The cots on which the men slept, Snow recalls, were barely two feet wide and stacked four deep so that 16 medical officers found themselves and their duffel bags crammed into a single cabin equipped with one latrine. The ship had been designed for 500 passengers, but it carried 3,500 men to Australia. By the time it arrived, many were suffering from severe colds, and a fair number were hospitalized with pneumonia, including the 105th's commanding officer. The lack of antibiotics combined with the southern hemisphere's winter conditions made for a rough landing for many.

This article is the first in a two-part series on the role of HMS in World War II. The second article will appear in an upcoming issue.

"Every man a professor!" as their tongue-in-cheek rallying cry.

The tough conditions persisted ashore. No one seemed prepared for the arrival of the 105th. The men initially camped out in the bitterly cold Australian winter in tents with dirt floors; their first dinner consisted of cheese and hardtack biscuits that had apparently been baked during World War I, judging from the 1918 date stamped on their containers. Reaching their final destination required a rail journey of some 1,300 miles with only bare wooden seats for beds. Because the Australian railways used different, and sometimes incompatible, gauges, the men had to stop twice and switch over to new trains on separate tracks and unload, by hand, every last piece of hospital equipment. By the time the men arrived near Gatton, at the Queensland Agricultural College, which had been evacuated and turned over to the U.S. Army for the purposes of

UNDER THE BIG TENT: Wounded soldiers from the New Guinea campaign were cared for in open-air settings, such as this medical ward at Biak (top left). The arrival of the new beer rations always raised morale among the men of the 105th (top right). The officers of the surgical service of the 105th posed for a photograph in May 1945 (above). Hartwell Harrison '33 (seated third from the left), chief of the surgical service, invented fever therapy as a treatment for drug-resistant gonorrhea.

establishing a hospital, they were both relieved and anxious to get to work.

Hospital Down Under

The members of the 105th established their hospital on 80 acres in the center of a large valley. By the time construction was complete, the base resembled a small city of nearly 700 people, including 60 doctors, 115 nurses, nearly 500 enlisted men, and a handful of civilians. They converted classrooms into wards and operating rooms, and they built separate structures to house the Red Cross, pharmacy, pathology laboratory, patients' mess hall, medical supply warehouses, and other essential departments.

Turning an agricultural college into a hospital posed unique challenges. Members of the radiological service spent their first month at Gatton installing two large x-ray machines. They took great care to ensure that the fluoroscopic room they created was light-tight; to their chagrin, as they later discovered during the humid summer months, they had also made the room nearly airtight.

Although everyone in the 105th had to contend with the winds that whipped ceaselessly across the fields of Gatton, those in the laboratory service had the hardest time of any. The currents carried with them not just the chill of the Australian winter, but also a hardy sample of the bacterial and mycological flora of West Queensland, which deposited themselves on the frustrated pathologists' agar plates.

There wasn't much for the doctors of the 105th to do, at first. Patients were mercifully few and their ailments typical of those that tended to afflict young men living in military camps. But soon enough, the hospital began to fulfill a vital need when fighting broke out in New Guinea. The surgical service admitted many soldiers with soft tissue wounds caused by shrapnel and small-caliber-rifle and machine-gun fire. Their injuries were often complicated by compound fractures. The medical service treated many cases of malaria, dysentery, pulmonary tuberculosis, hookworm, scrub typhus, salmonella infections, typhoid and paratyphoid fever, and filariasis.

Doctors in the 105th also saw a fair number of neuropsychiatric cases, which they treated in closed wards located behind the stockade. Recalls Arthur Pier '39, "The patients were mostly soldiers in their early twenties, and many of them were very scared. They didn't want to go to war and were literally sick at the prospect. There was just a tremendous amount of neurosis."

Once the casualties began to pour in, Gatton became a very busy 1,000-bed hospital abutted by a tent city in which another 1,000 soldiers were undergoing rehabilitation so that they could be returned to combat duty. The

PHOTO COURTESY OF THE HARVARD MEDICAL LIBRARY IN THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE

LOCAL HEROES: The native people of New Guinea bravely undertook the task of transporting wounded soldiers, by litter, from the frontlines to the portable hospitals. They would carry the injured for distances of up to 12 miles.

rehab hospital patients were taken on daily five- to fifteen-mile hikes to whip them back into fighting shape. They also learned water discipline—one canteen of purified water per day, and if the weather was too hot, too bad! Men were either being treated or on duty; there simply was no in-between status.

Although some of the men were afraid to return to battle, even more were eager to see action. Snow remembers one soldier who, before the war, had undergone a radical mastoidectomy that had left him deaf in one ear. "Now, son, how in the world did you manage to enlist?" Snow asked him. "Well, doc," the man replied, "I wanted to get in so badly that I didn't let them examine the bum ear." Snow saw another patient who had been born blind in one eye, a problem that became apparent during target practice; Snow drummed him back stateside. "We were all eager to be able to contribute something to the war," he says.

PHOTO COURTESY OF THE HARVARD MEDICAL LIBRARY IN THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE

JUNGLE FEVER: Members of the 4th Portable Surgical Hospital about to depart for New Guinea in June 1943. In the middle is Lieutenant Arthur Pier '39.

Infection and Innovation

Medical innovation represented one of the 105th's most significant contributions to the war effort. Although Snow, at age 90, enjoys reflecting on a life lived through what he terms "the golden age of infectious disease," he vividly recalls the hardships of the World War II era. Although it had been discovered years earlier, penicillin did not come into use until relatively late in the war.

Arthur Pier's primary job was dealing with malaria, which was often fatal. "We treated patients with intravenous quinine," he says. "We also saw a fair amount of dengue fever and other tropical illnesses not familiar to us from back home in Boston. One especially nasty disease was scrub typhus, which was transmitted by the bite of a mite and was often deadly—it caused a kind of encephalitis. In New Guinea, we even stumbled across a leper colony populated by indigenous people. It was quite shocking and horrifying to see how the disease had just eaten away the ear and nasal cartilage of many of these individuals. Although it wasn't possible for us to follow up because our unit moved on, we administered a hefty dose of penicillin to each of them, in the hope that it might do some good. Penicillin was our new miracle drug and because it was so new, it seemed magically effective in treating strep and staph and other bugs."

By 1944, penicillin had also become the standard treatment for gonorrhea; this came as a great relief to Army officials who had been alarmed by a strain of gonorrhea that proved resistant to sulfa drugs. For two years, though, drug-resistant cases of gonorrhea were treated by an innovative method developed by a doctor in the 105th, Hartwell Harrison '33. Harrison's "fever therapy," carried out in so-called fever cabinets, was used to cure more than 300 cases. So successful was his method that it was widely copied by other general hospitals during the war.

Because the gonorrhea organism is fragile, Harrison's idea was to eliminate it without killing its host. His therapy called for patients to be dressed in loincloths, hooked up intravenously to fluids, and have rectal thermometers inserted to monitor their temperatures. They would then be enclosed within wooden "fever cabinets" under infrared lamps that raised their body temperatures to a sweltering 105 degrees—for 12 agonizing hours. Patients quickly became delirious.

"Boy, that was rough on those guys!" remembers Snow. "But once they survived the treatment, they were cured." Fever therapy for sulfonamide-resistant gonorrhea was instituted in October 1942 and continued until it was replaced by the advent of penicillin therapy in 1944.

Medics Under Fire

Some of the HMS doctors' most noteworthy wartime accomplishments—and toughest medical challenges—took place in the heat of battle. Some doctors of the 105th found wartime medicine too similar to the careers they had left behind in their Boston practices. "I had been dying to get into the war," recalls Arthur Pier. "I couldn't understand why any doctor would want to stay at home. But being around a general hospital was boring; it was too much like civilian life back in the States. I volunteered for the 4th Portable Surgical Hospital because I

Without laundry facilities, surgeons did not wear operating gowns, but

wanted to be close to where the action was." When the 105th eventually moved from Gatton to a place called Biak on the north side of New Guinea to support the Allied invasion of the Philippines and Japan, Pier and others like him got their chance.

The mobile surgical unit was a revolutionary new concept at the time. Each unit was set up with tents and equipment to accommodate 25 patients within 10,000 yards of the battle line. In reality, these units sometimes crept up to within 750 yards of the combat zone. Patients could be worked on only 30 to 40 minutes away from the spot where they had fallen wounded. The injured were transported on litters carried by four New Guinea native people, accompanied by four more as relief. The patients would be brought first to the portable, then to the evacuation hospital, and, finally, to the general hospital for long-term care and rehabilitation.

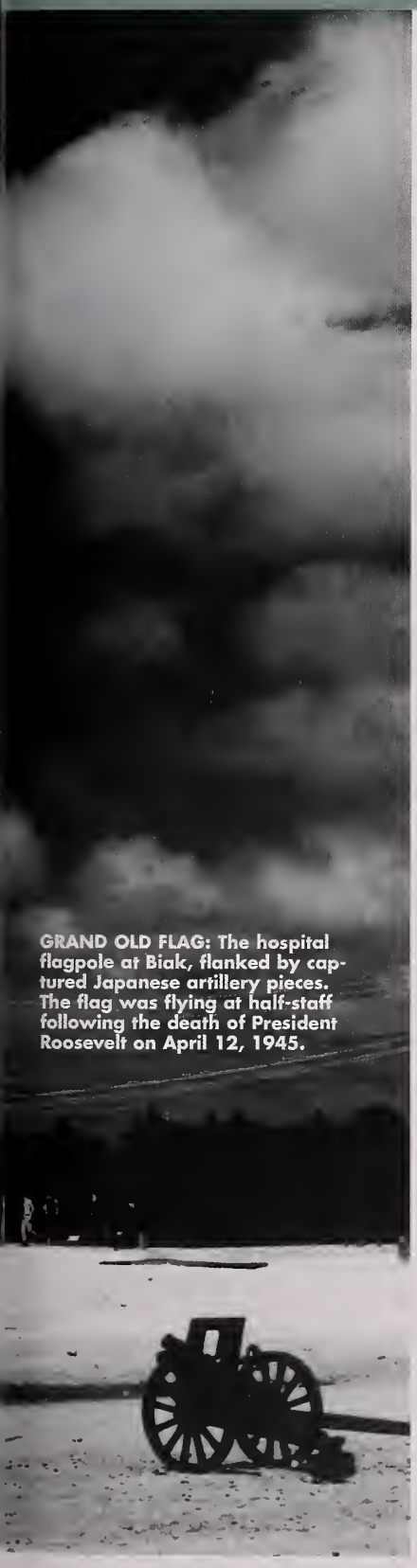
But establishing surgical wards in the jungle was no easy task. There was no open, dry ground on which to set up a hospital unit. The 5th Portable made camp on an abandoned muddy battlefield too sodden to be burned for sanitizing purposes. Downpours would occasionally wash into view the rotting corpses of Japanese machine gunners trapped inside their pillboxes.

To make matters worse, sniper fire, sometimes drawn by a surgeon's flashlight, posed a constant danger. Geneva cross markings failed to protect the doctors at work. One entire portable was pinned down for hours by machine gun fire at Buna, and the other survived strafing by enemy planes. One harrowing time, the Japanese broke through between the 4th and 5th Portables.

The men who served in the portable units had to battle natural threats as well. They lost weight due to the sultry temperatures and constant sweating, and many of them suffered from jaundice and diarrhea. Mosquitoes, lizards, flies, biting ants, and stinging scorpions added to the hazards of jungle life.

PHOTO: COURTESY OF S/SGT H. E. MCKINLEY, ARMY AIR FORCE, AND THE HARVARD MEDICAL LIBRARY IN THE FRANCIS A. COUNTWAY LIBRARY OF MEDICINE

instead performed surgery clad in shorts, shoes, and rubber aprons.



GRAND OLD FLAG: The hospital flagpole at Biak, flanked by captured Japanese artillery pieces. The flag was flying at half-staff following the death of President Roosevelt on April 12, 1945.

Jungle Surgery

Inside their rudimentary operating rooms, which were fashioned out of tents and furnished with tables and stands made of pandan and bamboo, HMS doctors relied on skill, luck, and ingenuity to care for their patients. Their equipment consisted of a basic surgical kit to which they had added special instruments; one officer transformed a two-tipped mortician's syringe, some rubber tubing, and empty saline flasks into a portable suction apparatus, which proved quite an effective tool in abdominal and skull procedures.

Sanitation posed the greatest challenge. All instruments were boiled to start the day, and kits for surgery were taken from this reservoir. One man was assigned full-time to cleaning and resterilizing instruments. Each operating area contained a homemade table for sterile supplies, solutions, reserve instruments, and a bucket of sterile gloves and towels in bichloride of mercury. Surgeons used gloves wet and, without laundry facilities, did not wear operating gowns, but instead performed surgery clad in shorts, shoes, and rubber aprons. In most cases, except when they operated on abdominal or head wounds, the surgeons worked alone. During the nighttime blackouts, they relied on light from kerosene lanterns and battery flashlights. The door flaps would be sealed with blankets and a messenger posted outside to run errands and keep the door closed.

Surgical procedure also followed very different rules from those the HMS doctors were accustomed to back in Boston. They would expose the wound and prepare the operative field by applying soap solution and alcohol, but the patients' clothes were never removed entirely because no replacement uniforms were available. Most patients had not bathed for days or even weeks, were covered in mud and sand, and suffered from fungal infections of the skin, yet precious antiseptic was applied to the skin only around head or abdominal wounds.

Despite these extraordinary conditions, HMS doctors achieved remarkably low mortality rates; for one of the portables, the operative mortality in 202 cases was 2.5 percent.

A Season in Hell

Reflecting on their experiences in the 105th from their perspectives as physicians, both Arthur Pier and Robert Snow wax philosophical. "War is a savage, horrible business, no doubt about it," says Pier, who served in the European theater as well as the Pacific, and was only 40 yards away when Hitler took his own life. "In Europe, I dealt with a lot of war prisoners. We gave our enemies the same medical treatment as our own wounded, but the Germans certainly didn't treat their captives very well. The Norwegian prisoners were just full of tuberculosis. I also saw quite a bit of starvation."

"In war, neither side is immune from atrocities," says Snow. "Some Japanese prisoners preferred to starve to death in the jungle rather than face capture because they feared torture. I know that we never saw any Japanese prisoners of war in Australia; rumor had it that they were interrogated, put on planes and, when those planes landed, there were no longer prisoners aboard; they had been pushed out mid-flight."

Yet despite the harsh realities of the Second World War, Arthur Pier, like his HMS colleagues who served in the 105th, and like his peers in what has been dubbed "the greatest generation," has no regrets: "In so many ways, the war seems unreal, like a dream world. But the lessons we learned so long ago still stand. We can never let a monster like Hitler get out of control like that again. We paid a high price for our victory, but we gave our children and grandchildren the gift of peace, and that, as anyone who has lived through a war firsthand can tell you, is a very great gift indeed." ■

Beverly Ballaro is assistant editor of the Harvard Medical Alumni Bulletin.

ON THE BRINK

by PAUL C. ZAMECNIK

"THAT YOUNG MAN IS POURING HIS MEDICAL education down the drain," a professor at Case Western Reserve University, where I had just interned for a year, told a friend of mine. It was August 1939, and my bride and I were about to embark on a Moseley Traveling Fellowship from Harvard to the famous Carlsberg Laboratory, an international center in Copenhagen for the study of proteins and histochemistry.

We drove from Ohio to New Hampshire, then jumped on a train to Montreal, equipped with steamer trunk, handbags, and a combination radio-phonograph. The next morning, we were greeted at the gangplank of the S.S. *Brant County* of Bergen, Norway, by Captain Brevik, a short, red-cheeked,

PHOTO COURTESY OF THE MUSEUM OF DANISH RESISTANCE 1940-1945

In 1939, when the author left for Copenhagen on a Harvard traveling fellowship,

UNINVITED GUESTS: German soldiers salute King Christian X on his morning ride in Copenhagen. In 1940, no resistance movement had been formed in Denmark yet, and the German occupying power was eager to sustain an image of politeness.

history stood poised on the edge of events that would dramatically change the world.

violaceous-nosed, gold-toothed, roly-poly, middle-aged Norwegian. He grasped Mary by both hands and offered us the bridal suite on this 5,000-ton freighter bound for Bristol, England and Antwerp, carrying a total of 12 passengers. The price was $60 one-way to Bristol, $65 to Antwerp. The time, 12 days.

Eight of the passengers were Germans, Nazi Bund members, returning to their homeland after being expelled from Canada for promoting Party activity. One was a theater projectionist who showed movies of the new German movement at a Bund in his spare time. Another was a zither player at the beer hall that served as a center for the Bund in Montreal. A third was a middle-aged widow who spent her time knitting sweaters for German soldiers.

Each evening, we gathered in the captain's quarters for radio news of the international situation, increasingly grave with each passing day. If war broke out while we were on the open sea, Bergen would send a special wireless message giving us our destination—the nearest neutral port. Once we were more than halfway across the ocean, it would likely be Antwerp. Our greatest fear was not that we'd be caught in the war, but that the boat would return to Montreal, depriving us of an exciting year in Europe.

When the ship reached Bristol, it took its place at the end of a long queue of freighters waiting to unload. We spent a day in Bristol, which was having a mock air-raid in concert with the French. War was clearly imminent, and Captain Brevik advised us to leave the ship, cross England by train, and take a ferry to Denmark.

Several days later, on September 1, we were awakened by a loud radio report in the common room of our Danish hotel. We found a group of somber people clustered around the radio. The Germans had just invaded Poland. There was great speculation as to whether England and France would follow through with their resolve that, if an invasion occurred, they would declare war. Two days later, both countries did indeed declare war, and a shiver ran through Copenhagen.

A Growing Field

The next day, we bicycled to the Carlsberg Laboratory, and I was astonished to find it to be so small. It looked more like the residence of an affluent count than the home of so much outstanding work in protein chemistry. A set of marble stairs led to a foyer, at the top of which stood Kai Linderstrøm-Lang, the new director of the laboratory. He was a blue-eyed, straw-haired man with a half-smiling face. He constantly held a partially smoked cigar, which he examined from time to time as if to ponder the effect of gravity on the growing ash. His long white coat bore streaks of red, yellow, and green under the left armpit. He greeted us diffidently, and mentioned that although there had been plans to fill the laboratory with foreigners that year, only one other visitor, another American, had turned up. A Dutchman had sent a cake as an apology.

"Your best bet is to go home," Linderstrøm-Lang said, "but that's up to you."

"What kind of chemistry does he do," I later asked the American, "to produce those unusual streaks under the arm?"

"Oh," he said, "he paints in his spare time and wipes his brush under his arm."

Under Linderstrøm-Lang and his associate, Heinz Holter, the Carlsberg Laboratory had recently become the center for the new field of histochemistry, and I decided with their consent to try to measure the respiration of a single cell, using the Cartesian diver technique developed at the laboratory. This research involved tissue taken from the cardiac muscle of ten-day-old embryonic chicks that was then incubated, dissected out, and planted. For many years, however, the Carlsberg Laboratory's chemical division, where we were located, had specialized in research on yeast, and the concentration of yeast in the laboratory air was too high for successful tissue culturing, particularly since the sterile hood had not yet been developed.

An arrangement was made with Albert Fisher, crown prince of the emerging tissue culture field, who had his own institute in Copenhagen, on the other side of the city. My wife, Mary, became tired of sightseeing and joined Fisher's wife in growing tissue cultures, which we carried across the city for metabolic experiments for the next nine months.

In the Blink of an Eye

On April 9, 1940, the first fine day of the Danish spring, dawn was just brightening the skylight of our atelier when the loud drone and repeated Doppler effect of many airplanes flying low back and forth over Copenhagen aroused us from a heavy sleep. I looked out at the cloudless blue sky and saw a dozen bombers receding in the distance, wheeling, then crisscrossing the city in a V-formation. I muttered to Mary that Denmark had no such planes. As they passed over our building, it shook slightly with the

boat would return to Montreal, depriving us of an exciting year in Europe.

soundwaves, and the Nazi insignia was clearly visible on the lower wings of the planes. "The Danes won't like this," I murmured as I watched heads appearing from the windows of nearby rooftops.

On the next approach of the planes, objects appeared to drop—not bombs, we could see, because they had begun to spread out and flutter down—but rather leaflets. I leaned far out over the sloping slate roof and pulled in a green handbill, printed on coarse cheap paper. It was written in imperfect teutonic Danish, which I translated briefly as:

"Notice to the Danish People: The German Government and German Army have as of this day occupied Denmark and Norway to protect them from the British, who have been harassing and mining the territorial waters of these countries. We urge the Danish people to remain quiet, to conduct daily business as usual, and to cooperate with the German authorities, sent here to safeguard our common interests. Further instructions will come via the Danish radio." The note was signed "Von Kaupitsch, German Commander."

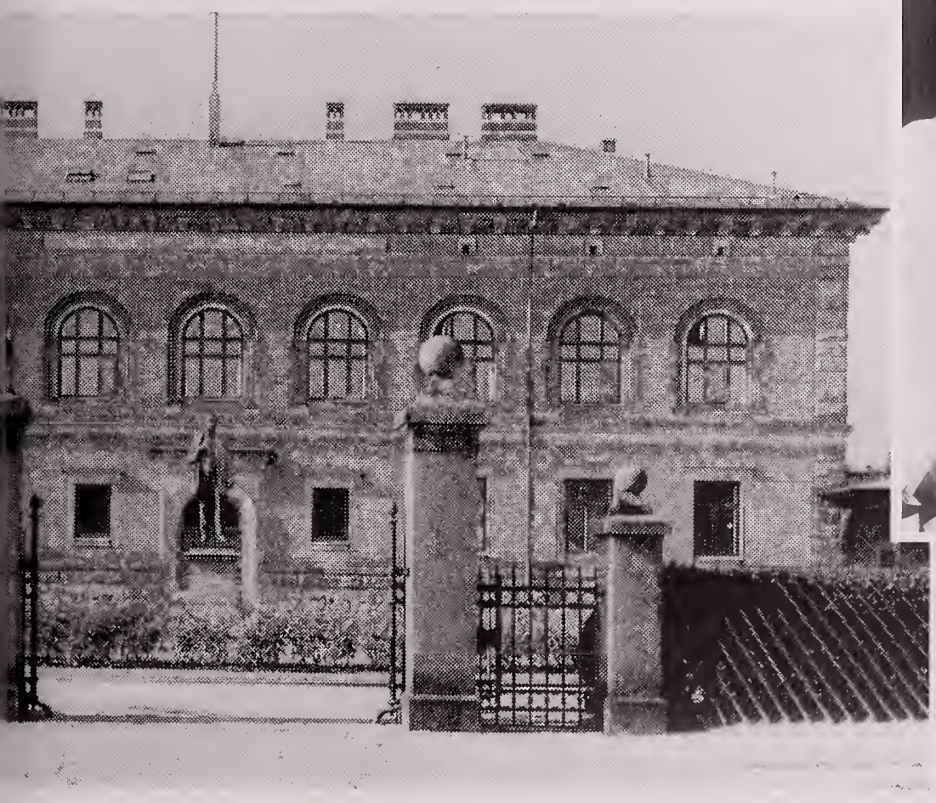
We quickly dressed and ran down five flights of stairs of the ponderous old gray stone apartment building, then entered Fredericksberg Allé, one of Copenhagen's main streets. How, we wondered, could a country be taken over in the blink of an eye? Was this the lightning-like end to our year in the fairy tale land of Hans Christian Anderson?

Fredericksberg Allé was usually deserted at 6:30 in the morning. On this day, though, people gathered on the street corners, asking each other in subdued tones if it was true—had Denmark already been taken over? Had there been fighting? Why had no gunshots been heard? Where were the German soldiers? How could they possibly have occupied Norway also? And where was the British fleet?

The *Berlingske Tidende*—the daily newspaper—was not at the kiosks that morning, and the Danish radio was silent. The place to find out the truth was at the Danish Pentagon, down near the waterfront. We joined a silent parade walking there, to confirm sadly that German soldiers were standing guard outside, with an occasional Danish uniform also visible. People living near the harbor had heard naval guns just before dawn, then silence.

Demise of the Toy Soldiers

At Langlinie, near the rock on which the little bronze mermaid sits watching the harbor, we could see German troop ships unloading, with open-sided staff cars full of officers in dress uniforms zooming up a ramp then off onto the highway at high speed—clearly not expecting resistance. Then came motorcycles with sidecars, the drivers wearing battle dress and helmets, the sidecars manned by soldiers with their hands on mounted machine



PHOTOS: COURTESY OF PAUL C. ZAMECNIK

IN THE LAB: The Carlsberg Laboratory (left), looked more like the residence of an affluent count than the home of outstanding protein chemistry research. Kai Linderstrøm-Lang (above) served as director of the laboratory.

guns. A dozen coal barges bearing German flags filled the harbor. They had been in Copenhagen port for several days, and German soldiers had emerged from them just at dawn, the vanguard of the invasion force.

We walked over to the Amalienborg Palace, whose entrance was normally guarded by two tall, handsome Danish soldiers wearing red uniforms with crisscrossed white straps and tall fur shakos, carrying gleaming old-fashioned muskets, standing in front of a tiny house meant to shade them. No toy soldiers were there today, only a horizontal tracery of bullet holes across the stone walls of the palace toward, through, and past the guard houses, which were splashed with blood.

As we walked toward the center of Copenhagen, we saw motorcycles with machine gunners in readiness at major intersections. A parade seemed to be forming on the main avenue leading from the harbor, and we stood on the sidewalk alongside a long string of Danes, silent and funereal, as first rows of soldiers on motorcycles, then footsoldiers with guns strapped across their backs, then open lorries with officers in full parade dress with short swords at their sides, moved slowly from the harbor toward the center of town. The parade reached a traffic light, which turned red during the procession. A *sporvogn*—a streetcar—clanged its bell angrily and persistently, the parade stopped, the streetcar passed across the intersection, the light turned green, and the victory march took off again, while the spectators snickered.

As the parade passed, Georg Hevesy, the father of radioactive tracers, nudged me. "Guess what I've been doing," he whispered. He had dissolved Max Von Laue's Nobel Prize medal in aqua regia, then he had set the glass container on a high laboratory shelf for the duration of the war. Von Laue, the German pioneer in x-ray diffraction, had given the medal to Hevesy for safekeeping, since the Nazis were collecting all precious metals. (After the war, Hevesy precipitated out the gold and had the medal recast in Sweden.) Hevesy whispered in conspiratorial tones, "Come to our house for tea on Sunday. I have something for you."

Matters of Fate

Back at the Carlsberg Laboratory, we opened the door at the foot of the staircase leading to the main floor of the laboratory. Linderstrøm-Lang was standing in the foyer, his usual half-smoked cigar with its long white ash still attached in one hand, the shock of hair hanging down over one of his deliquescent eyes. He spoke slowly and waved one arm toward us. "Now go home, Pasteur and Sweetie Pie," he said, using his pet names for us, then turned and walked slowly away, adding, "and leave us to our fate."

NOTICE TO THE DANISH PEOPLE: As German planes flew overhead on April 9, 1940, green handbills printed on coarse paper floated to the ground. In imperfect teutonic Danish, they urged the Danes to remain quiet, to conduct daily business as usual, and to cooperate with the German authorities.

on the sidewalk alongside a long string of Danes, silent and funereal.

FOX IN THE CHICKEN COOP: German units marched to the Copenhagen Citadel on April 20, 1940, for a parade in honor of Hitler's birthday.

PHOTO: P. THIEL ATL./COURTESY OF THE MUSEUM OF DANISH RESISTANCE 1940-1945

We paused to look at the windowsill on which the incoming mail was stacked. That very day there was an envelope from the Finney-Howell Foundation with a check for $1,000, my stipend for the second six months of my fellowship. Nothing from the Moseley Fellowship—that $250 for the second six months wouldn't arrive until the spring of 1946, six years later, making its way mysteriously to Boston, postmarked by stamps of both the German and British censors. We pocketed the check, wondering how negotiable it would be, and wandered into our laboratory to examine our tissue cultures.

Kai Morgensen, a postdoctoral fellow, came in wearing cavalry pants with a red stripe down the side, and riding boots, partly covered by a long white laboratory coat. "I shot a German!" he shouted elatedly. "We were called out during the night, rendezvoused at a strategic approach near the outskirts of Copenhagen. As a column of German soldiers approached, we fired, then had to retreat because of their superior strength."

"Morgensen," we said, "take off those silly pants and hide your gun."

Mission Impossible

As we bicycled back toward town center, we met a dusty column of German soldiers on bicycles riding steadily toward the center of town, sweat dripping out from under helmets and gray woolen uniforms, guns strapped diagonally across their backs. Rumor had it that they had been dropped by parachute between Roskilde and Copenhagen, their bicycles in two halves, which they bolted together once they hit the ground. We wandered into our favorite restaurant. Across from us were two German army officers, legs stretched out at a small table, engaged in a relaxed supper. For the first time we decided to speak in Danish, which would be less conspicuous than English.

What should we do, we wondered, during the evening of such a fateful day? Just around the corner was a cinema, so we stood in line for the seven o'clock show. In front of us were two German soldiers in battle dress, with guns in their holsters and hand grenades hanging on little chains from their upper pockets. *Drums Along the Mohawk* was playing, featuring Claudette Colbert and Henry Fonda. We watched Indians and settlers engaged in mortal combat, their words dubbed in Danish.

It was dark when we left the theater, incredibly dark on this first night of the imposed blackout. We stumbled on the curbstone, then walked in the middle of the street until we recognized the huge bulk of our building. We climbed the five flights of darkened stairs to our apartment. Outside the door we found a bucket of sand, a hard hat, and a note stating that, since we lived on the top floor, I had been appointed the *hus vagt*. My duties were to climb onto the sloping

slate roof, douse any firebombs with sand, and rouse the occupants below if things got out of hand.

The Color of Money

The next few days we pondered what to do with my fellowship check. The Danish banks, now supervised by the Germans, would not touch it. Fortunately, two unanticipated sources of funds sprang out of nowhere. That Sunday afternoon, when I attended tea at Georg Hevesy's house, he leaned over my chair, put one arm around me, and with the other slipped a thick envelope into the inside pocket of my coat. "Look at it later," he said, before moving on to converse with his other guests. The envelope contained 5,000 Danish kroner, the equivalent of six months' salary, which we were free to use, with the understanding that we would send the equivalent to Harold Urey, the father of heavy isotopes, at Columbia when we returned home—for safekeeping for Hevesy.

The second windfall came that same week, when the chief of the American consulate telephoned and asked if I were free to visit him at his office. Linderstrom-Lang, who had taken the call, was dumbfounded, as were Mary and I, since we had recently been given circular treatment—in and very quickly out—at the consulate, where we were informed that our check could not be cashed. The consul general greeted me warmly, ushered me into his spacious office, and smoothed out a telegram on his desk. "Are you a friend of Cordell Hull?" he asked.

Hull was the U.S. secretary of state, and so I answered slowly and warily, "Why yes, I know him." I should, of course, have said I knew *of* him. The telegram read: "Inquiring welfare, financial needs and future plans of Paul and Mary Zamecnik." It was signed "Cordell Hull."

"Do you have financial needs?" the consul general asked genially.

"Well," I said casually, "it would be helpful if you could arrange to cash our fellowship check."

"Let me see how much money we have in our safe," he responded, proceeding to turn the dials appropriately to open the small floor safe in his office. "I can spare $500," he said. "That's about all we have. But I'll plan for you to get the other $500 at the Danish National Bank." We later learned that our friends and family members had been pulling strings back home.

The next morning, I met an aide from the consulate. We proceeded to an inconspicuous side door of the Danish National Bank, presented a note to a German guard in uniform, and were admitted. We passed through a large room filled with perhaps two dozen tables, with huge piles of money in large denominations from various countries thrown in disarray on each table. There were British notes in the hundreds, French francs, Danish kroner, German marks, and other currencies I did not recognize. As I walked behind our escort, my foot bumped into a thick stack of British five-pound notes, which I picked up and threw onto the pile on one table. It occurred to me later that such a windfall would have kept us happy for a year—and whose money was it, anyway? In a small room leading off this larger one, a German officer counted out five American one-hundred-dollar bills and handed them to me.

Missed Connection

The day after the German occupation, the German consulate had sent our passports, along with those of other foreigners, to Berlin. After a month's wait, we were given 24 hours in which to leave Denmark. On the day before our departure, we received a message that Niels Bohr wished to see us. Bohr, a fervent anti-Nazi, was the primary source of information on the new atom splitting reaction that would lead to the creation of the atomic bomb. He asked if I would take a letter to Henry Smythe, the Princeton author of the pioneer report on atomic explosions. I reached out my hand, and for a second we both held the envelope. Then he said, "By the way, are you leaving via Petsamo?"

"Oh no," I replied, "Petsamo is cut off. We're traveling through Germany and Italy." His expression hardened, and his hand retracted the letter.

"Oh, in that case," he said, "I won't give it to you—it would be too dangerous."

"We don't mind," I said. "I know of a good place to hide it."

"No," he answered, "just tell Henry Smythe and Harold Urey that I am all right for the present—not to worry about me." What was in that letter I never knew, only that fate kept me from being the courier for what might have been an important piece of history.

Homeward Bound

The following day, our Danish friends waved goodbye as we boarded a train for Gedser, at the southern tip of Denmark. There we transferred to a boat destined for the German side of the

month's wait, we were given 24 hours in which to leave Denmark.

Baltic. Already German soldiers were leaving Denmark for a rest back home. It was clear that the crack divisions of the German army had not been assigned to the Danish invasion; instead, a number of older troops had been appointed for this so-called guard duty.

Our connecting train then sped to Berlin, where we had paid to be met by a guide who would then transfer us to a train for Munich. Berlin was under a blackout, however, and no guide turned up to meet us. By the time we had collected our baggage, the few taxis available were gone. We managed to make our way to Anhalter railroad station, where we learned that no trains were leaving for Munich that night. Our only recourse was to spend the night in the Hotel Berliner. The station was full of young soldiers with guns and packs, jostling each other and us as they searched for their units. Few civilians could be seen.

In the morning, a loud radio awakened us. At breakfast every ear was tuned to the radio, which could be heard throughout the hotel dining room. During the night, German forces had been sent into Holland and Belgium, to protect them, as the official word had it, from the British, who were about to invade the low countries.

By noon on May 10, we found a train for Munich, largely occupied by German businessmen. En route, a group of inspectors accompanied by an armed guard entered each compartment. Inside a box in a rack above our heads was the radio-phonograph that we had brought from Montreal. The inspector asked us to bring it down and cautioned us sternly, "Radios are forbidden."

"Oh," we said. "Phonograph!"

He opened the top, saw the disc and arm pickup, and having never before seen a combination radio-phonograph, smilingly said, "Oh, *phonografie*, that's OK."

At Munich, we transferred to a train going through the Brenner Pass. On drawing into the station at Brennero, we could see that the German half of the station was blacked out, while the Italian half remained brightly lit. We proceeded without event to Genoa, to meet a U.S. liner scheduled to leave the Mediterranean later that month. We had confirmed tickets, but at the steamship headquarters we found that our tickets had been sold again and that we had no booking after all.

A huge, disorganized crowd filled the ticket office, and it took several hours of squeezing to reach the counter. A Danish clerk apologized, but said that the situation was hopeless, and that our best bet was to wait for the S.S. *Manhattan*, due in Genoa in two weeks. He advised us to enjoy Italy, and not to worry. He assured us that Italy would be neutral during the war. We were secretly delighted to have a chance to visit Florence. There we photographed a demonstration against the British by a large group of Italians declaring that the Mediterranean was an Italian sea, and that they wanted control of Gibraltar, Malta, Suez, and Djibouti. The ambivalent police cracked a few heads before the crowd dispersed.

Capri was deserted, other than the occasional American. We climbed to Anacapri, kayaked on the far side of Capri, and had lunch on a hill overlooking the Mediterranean, where we watched a huge cannon being installed on a movable track, so that it could be hidden in the side of the mountain.

We boarded the S.S. *Manhattan* in Naples, its first Italian destination on returning from the United States, and proceeded to Genoa. Here we spent half a day searching for our luggage among the mountains of unorganized baggage in the warehouse of the American line. Many refugees from the war were refused passage because of overbooking, and the ship's swimming pool was used for a dormitory. Inexplicably, however, large shipments of machine tools from Eastern Europe were at the same time being loaded onto the S.S. *Manhattan*, occupying areas that could have been used for extra passengers. The captain gave a stern warning that all passengers should remain within sound of the boat whistle. Three blasts were our signal to hurry back, since the ship might weigh anchor within an hour. Despite the warning, a group of Canadian priests went to Milan. The three blasts sounded, and although they returned moments before debarkation, the gangplank had already been pulled and they were left behind.

By the time the S.S. *Manhattan* reached Gibraltar, Italy had declared war and had begun a military mop-up of an area bordering the south of France. Rumor had it that the Italians had waited for the *Conte di Savoia*, the pride of its transatlantic line, to dock, to avoid its capture by the British. Just outside of Gibraltar, we were spotted by a German submarine, which exchanged messages and then allowed our passage to New York. Our question of the morning of April 9, 1940 had been answered—it was indeed the end of a fairy tale year. ■

A WATCHFUL EYE: Near the rock on which the bronze Little Mermaid watches the harbor, observers could see German troop ships unloading. The officers on board seemed relaxed and clearly did not expect resistance.

Paul C. Zamecnik '36 is the Collis P. Huntington Professor of Oncologic Medicine, Emeritus at HMS and honorary physician and senior scientist at Massachusetts General Hospital.

Harvard Medical Alumni Association
25 Shattuck Street
Boston, Massachusetts 02115
Change Service Requested

Non-Profit Organization
U.S. Postage PAID
Permit No. 52420
Boston, MA